UNITED STATES ARMY

AVIATION DIGEST

JUNE 1989

Professional Bulletin 1-89-6

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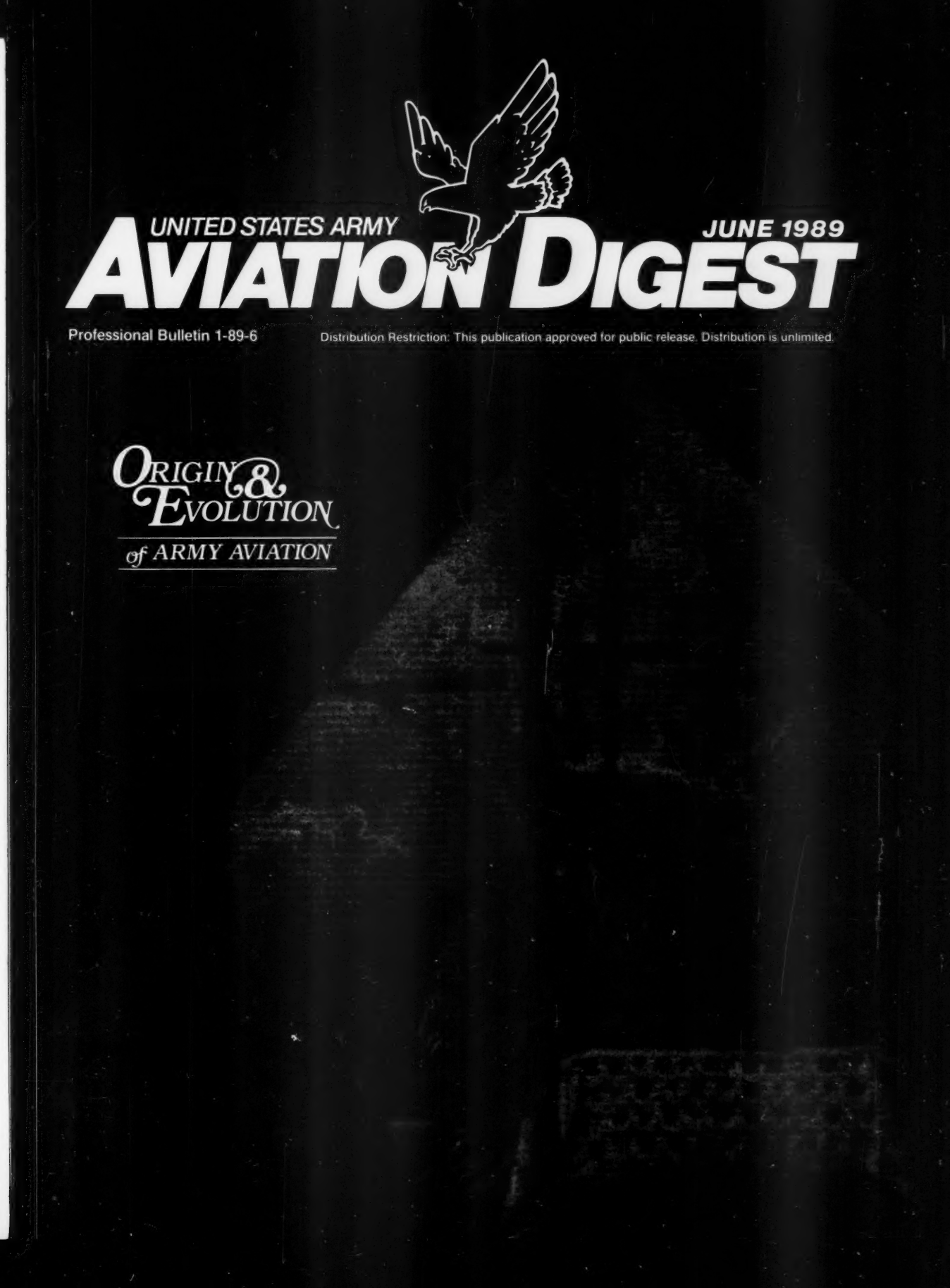
ORIGIN & EVOLUTION of ARMY AVIATION



PROFESSIONAL BULLETIN

1-89-6 • JUNE 1989

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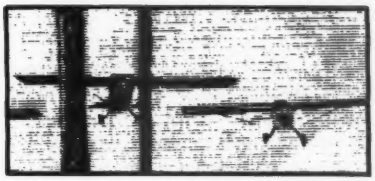

Cover: **It's most appropriate that the *Aviation Digest* pay tribute to the 47th anniversary of Army Aviation. The cover depicts aviators and aircraft of the "Class Before One" that pioneered the birth of Army Aviation during the Louisiana Maneuvers of 1941. Also dedicated to the history of Army Aviation is this month's lead article. This story reviews events relating to the ancestry, birth and early evolution of Army Aviation. "Origin and Evolution of Army Aviation —Part 1: The First Century," begins on page 2.**

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The mission of the *U.S. Army Aviation Digest* professional bulletin (USPS 415-350) is to provide information of an operational, functional nature concerning safety and aircraft accident prevention, air traffic control, training and doctrine, maintenance, operations, research and development, aviation medicine and other related data. Information contained in this bulletin does not change or supersede any information presented in other official Army publications.

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Major General Ellis D. Parker
Chief, Army Aviation Branch

The U.S. Army Aviation Digest Goes Bimonthly

The *Aviation Digest* will undergo major changes in the near future. It will reduce its publication frequency to bimonthly with a combined July-August 1989 issue. It also will expand pages published from 48 to 64 and change its page size from 7⅞ by 10¼ inches to 8½ by 11 inches. This cost savings initiative is aimed at standardizing our Aviation Branch professional bulletin (PB) by bringing it in line with the rest of the U.S. Army Training and Doctrine Command (TRADOC) PBs.

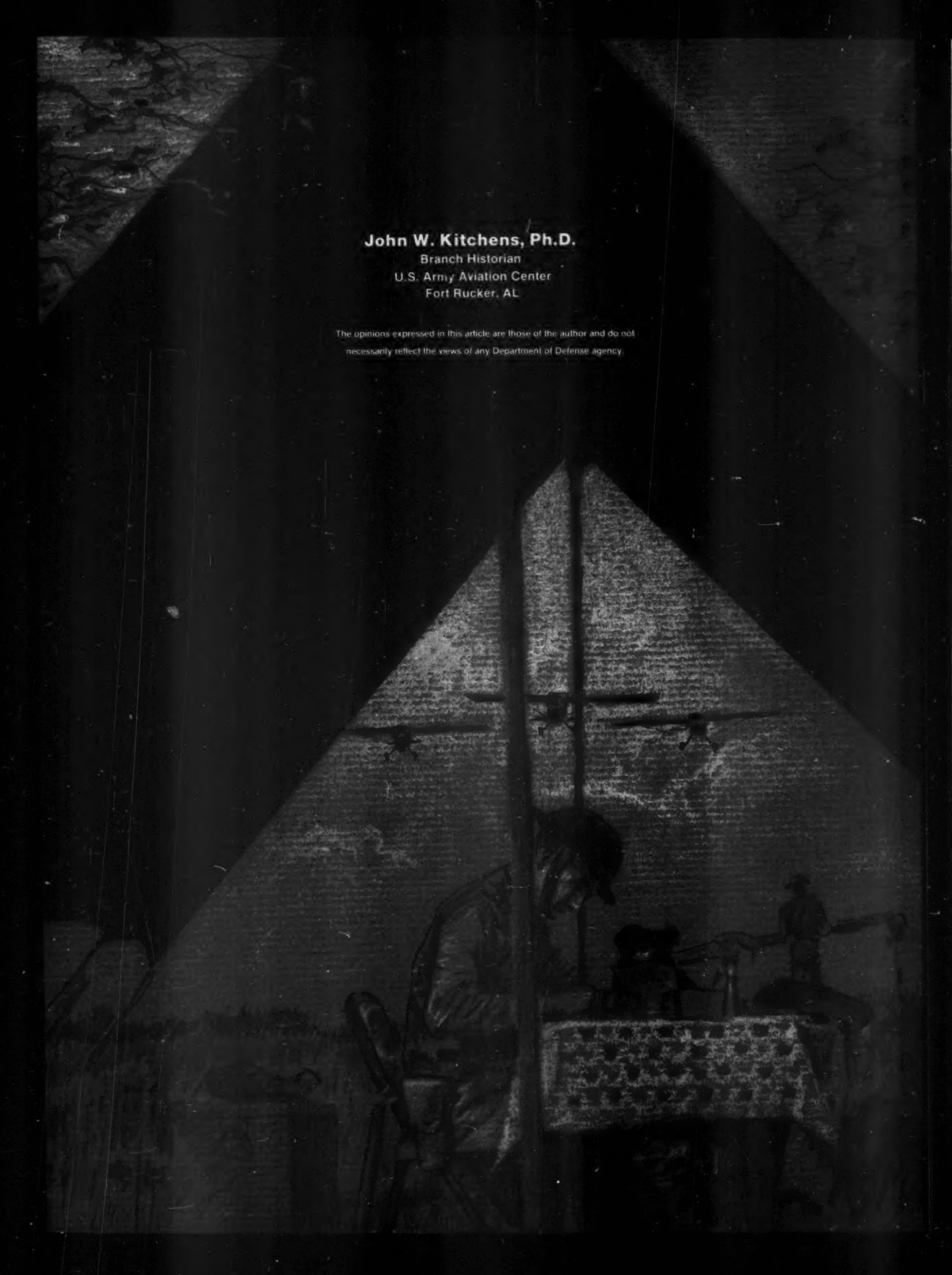
Like an old friend, the *Aviation Digest* has been with us since 1955. For a bit of its history, we recall that, in 1952, the Department of the Army (DA) directed the Aviation School, then at Ft. Sill, OK, to recommend tangible actions to offset a rapidly rising Army Aviation accident rate. Brigadier General Carl I. Hutton, commandant, recommended an accident prevention board (which became USABAAR, then USAAAVS and later USASC) and a professional aviation periodical. The latter recommendation was approved and evolved in the *U.S. Army Aviation Digest.*

The Aviation School's recommendation to DA ran headlong into a request from the Transportation School and Center at Ft. Eustis, VA, for a periodical on Army Aviation. DA consolidated the requests and set the policy of having only one periodical to cover all of Army Aviation. DA charged the Aviation School with putting the *Aviation Digest* together but classified it as an Armywide periodical with publication (printing) and distribution proponency at DA level. Proponency was retained at HQDA level until 17 July 1987.

The transfer of the *Aviation Digest's* mission and functions from HQDA to TRADOC came on 17 July 1987 as a result of an earlier Secretary of Defense-directed reduction of 55 percent in the Department of Defense (DOD) periodicals program. On 16 July 1987, professional bulletins were established as a new official Departmental publication media. In turn, the HQDA Periodicals and Review Committee determined that the *Aviation Digest* met the criteria for the new media.

TRADOC continuously reviews its product line to identify tradeoffs to meet future requirements. A review of the *Aviation Digest* PB with the other TRADOC PBs, in September 1988, indicated that the *Aviation Digest,* other than the *Military Review,* was the only TRADOC PB that published monthly. It had the widest readership and the greatest number of copies printed per year (493,500). A comparison of costs of the PBs indicated that the *Aviation Digest* costs were less per copy than all other PBs. However, overall costs, because of frequency of publication and number of copies printed, were greater. In keeping with fiscal demands, TRADOC has requested the *Aviation Digest* to cut its overall total costs.

The *Aviation Digest* has served the Aviation community as a valuable source of professional, pure safety and aviation accident prevention information for more than three decades. With these newest changes, I have directed the *Aviation Digest* staff to continue to strive to meet the needs and special requirements of its broad readership. More than 41,000 readers—to include about 27,300 Active Army; 8,500 Army National Guard; 3,000 U.S. Army Reserve; 1,300 civilians; 165 DOD activities; 72 Marine Corps; 60 non-DOD; 32 U.S. Air Force members and 400 miscellaneous—should benefit from the major changes to be initiated soon.



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The opinions expressed in this article are those of the author and do not necessarily reflect the views of any Department of Defense agency.

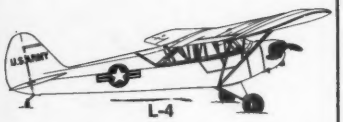
ORIGIN & EVOLUTION of ARMY AVIATION

Part I: The First Century

SINCE ITS creation in 1983, the Army Aviation Branch has continuously developed and consolidated. Examples of this development and consolidation are many: implementation of the aviation officers courses; establishment of the NCO Academy; incorporation of the U.S. Army Air Traffic Control Activity; approval and implementation of the Army Aviation Modernization Plan and the Army Aviation Personnel Plan; and absorption of the U.S. Army Aviation Logistics School into the Aviation Branch. Before describing these and other recent developments in Army Aviation, it would be appropriate—on this 128th anniversary of U.S. Army aeronautics and the 47th of organic Army Aviation—to review the events relating to the ancestry, birth and early evolution of Army Aviation.

1861 Balloon Corps

1918 Army Air Service 1926 Army Air Corps



L-4
Cub

Ancestry

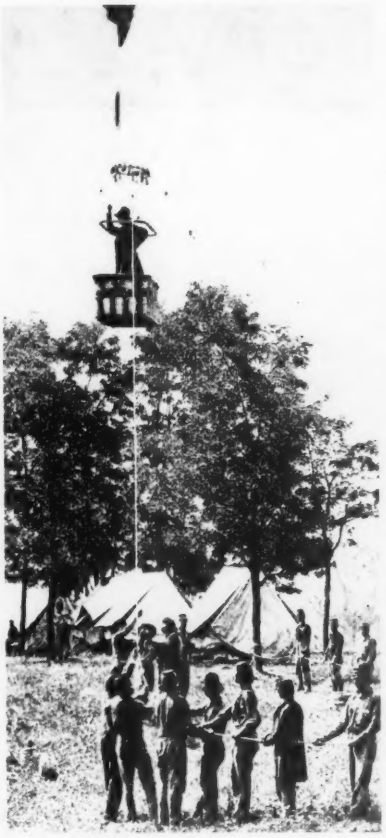
The earliest U.S. Army venture into aeronautics, a remote ancestor of the present-day Army Aviation Branch, was the Civil War-era Balloon Corps. Officially created in 1861, the Balloon Corps was placed under the Signal Corps. Professor Thaddeus S.C. Lowe, for whom Ft. Rucker's Lowe Army Airfield in Alabama was named, was the instigator and commander of the Balloon Corps. It was used during the Civil War for observation and artillery fire adjustment.

Later ancestors of the present-day Army Aviation Branch included the Army Air Service of World War I and the Army Air Corps of the following decades. A significant event occurred in May of 1918 when the Army Air Service first became independent of the Signal Corps. During the Armistice in November of that year, the Army had more than 190,000 men on aviation duty and had acquired around 11,000 planes; however, postwar demobilization left only a skeletal force. Nevertheless, Congress and others extensively debated in 1919 and 1920 whether to make the Air Service independent of the Army.

Congress eventually adopted the War Department recommendation and passed the National Defense Act of 1920. The Act kept the Air Service within the Army as a combat arm, coordinate with the Infantry, Cavalry and Artillery. The next major step in the evolution of the Army's air arm was the congressional act of 2 July 1926, which changed the name of the Air Service to the Army Air Corps.

On the eve of World War II, the Army Air Corps merged with other Army air elements to form the Army Air Forces. Then in another major reorganization in March of 1942, the Army Air Forces became an equal counterpart to the Army Ground Forces and the Army Service Forces. This entity, after evolving as an integral part of the Army for many years, became the U.S. Air Force by an act of Congress on 26 July 1947.

Professor Thaddeus S. C. Lowe ascends in the balloon Enterprise to observe and report Confederate soldiers' positions during the Civil War.



Organic Army Aviation

In the meantime, organic Army Aviation, the immediate ancestor of the present-day Aviation Branch, was born on 6 June 1942. If the sire providing the elan and esprit to organic Army Aviation was the Army Air Corps, the dam providing nourishment and support was Field Artillery and some other elements of the Army Ground Forces. The conception of organic Army Aviation resulted, not from a tender loving union, but rather from a fear of abandonment. Field Artillery especially began to feel neglected by the Army Air Forces and came to believe it needed a new separate air arm that would remain under its control.

During the period between the two world wars, the Army Air Corps became increasingly independent. It also became increasingly preoccupied with strategic air operations; that is, preoccupied with the use of its power independently of the ground forces to destroy enemy targets far beyond the battlefront. Consequently, some ground forces leaders became disturbed by what they perceived as the increasing neglect of their close air support requirements. This was especially true of Field Artillery, which had the most clearly recognized need for aerial observation services. Major General Robert M. Danford, the chief of Field Artillery, became convinced air observation was vital to the effective employment of artillery during World War I. He advocated the creation of an Army air arm dependent on ground commanders.

An even more ardent proponent was then Major William W. Ford. MAJ Ford was a Field Artillery officer and an aviation enthusiast who demonstrated the effectiveness of using lightweight planes to adjust artillery fire. His article, "Wings for Santa Barbara," published in the April 1941 issue of *The Field Artillery Journal,* was especially influential.[1]

Later that year, light aircraft maneuvers in Tennessee, Texas, Louisiana and the Carolinas corroborated MAJ Ford's contention: lightweight liaison planes, operating under the ground commander, were more effective than the heavier planes operated and controlled by the Army Air Forces. Furthermore, lightweight planes, such as the Piper Cubs (the Army L-4s), could be acquired for around $1,500. The Army Air Forces planes used for this purpose cost much more.

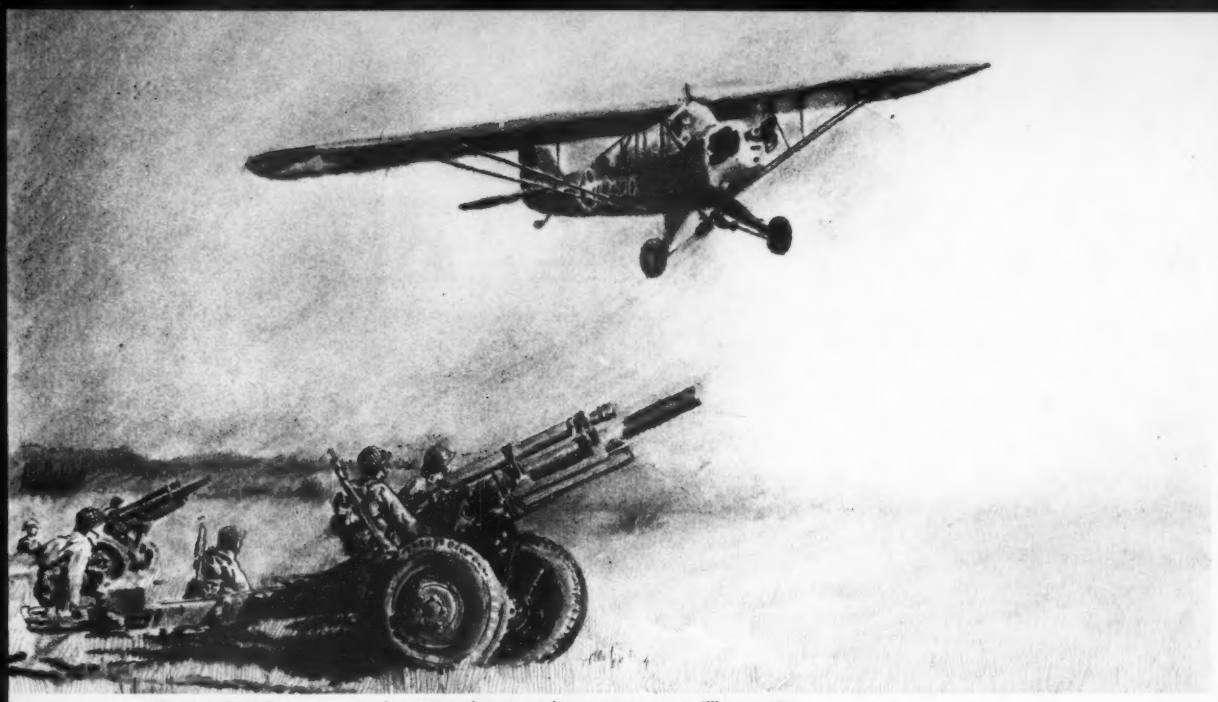
The leaders of the Army Air Forces and many of those of the Army Ground Forces remained unconvinced, however, and continued to favor the heavier planes. A test group formed at Ft Sill, OK, under the command of then Lieutenant Colonel Ford. This group conducted a final test of lightweight planes controlled by ground commanders in early 1942. Among others, First Lieutenant Robert R. Williams and Second Lieutenant Delbert L. Bristol would later play prominent roles in the evolution of Army Aviation. The two assisted Ford in training this group, which came to be known as the "Class Before One." The 1942 tests provided sufficient proof of the effectiveness of the lightweight planes. War Department leaders finally blessed the birth of the new child. Thus, organic Army Aviation came into being.

[1] Santa Barbara is the patron saint of Field Artillery.

1942 Army Aviation

Lieutenant Colonel William W. Ford tested lightweight planes to prove their effectiveness. The positive results of these tests gave organic Army Aviation its beginning.

L-5 Sentinel



The L-4 Grasshopper proves its reconnaissance value as an enemy artillery spotter.

1941
WWII

GRASSHOPPERS

1946
Army's first helicopters

Bell YH-13

World War II

The happy event, however, was not without a degree of postpartum stress. During World War II, for example, organic Army Aviation partly depended on the Army Air Forces for equipment maintenance, training, procurement and pilot selection. Often it did not receive the needed support and cooperation. Furthermore, some Army ground commanders initially scorned the "Grasshoppers," as the L-4s were called, derisively as well as appreciatively. One was quoted as saying, "I don't care where you go; I don't care what you do. Just make sure you don't get those aircraft near my command post."[2]

Notwithstanding these problems, the Department of Air Training, under the command of COL Ford, was established at Ft. Sill to train liaison pilots and mechanics. During the war, more than 2,500 pilots and 2,200 mechanics trained for organic Army Aviation. The supply of pilots with civilian licenses ran low. Organic Army Aviation had to depend on the Army Air Forces to provide the basic pilot training preceding the liaison training at Ft. Sill.

The war progressed; the Army liaison pilots and the L-4s demonstrated their value. More and more ground commanders of all branches began to request these aircraft for their units. As artillery spotters, the L-4s earned the reputation of silencing enemy troops and artillery by their presence in the sky. Before long, they were also used to transport ground commanders to gather intelligence and for other purposes.

By the end of the war, organic Army Aviation had definitely proven its value as a part of, and an adjunct to, the Army Ground Forces. When the war ended, however, most of the personnel were discharged and the inventory of aircraft was reduced from 1,600 to around 200.

[2] Cited by Lieutenant General Robert R. Williams (Ret) from the transcript of an interview conducted with LTG Williams by Dr. Herbert LePore, 8 May 1984.

The Korean War Era

During the period from the end of World War II to the beginning of the war in Vietnam, Army Aviation experienced a gradually expanding role and responsibility. It also experienced the growing pains of adolescence. Army Aviation remained a part of the Army when the U.S. Air Force became a totally independent service with the passage of the National Security Act of 1947. Some Army Air Forces leaders objected. They were concerned, among other things, that an aviation element within the Army would rival for scarce national defense resources. They managed, however, to place strict mission and aircraft weight limitations on the Army's air arm. These restrictions limited the missions of Army aircraft to surveillance and reconnaissance, local courier service and limited aerial photography. These activities constituted organic Army Aviation's major functions during World War II. Other aerial activities were reserved for the Air Force. However, Army Aviation was specifically excluded from involvement in them.

During most of the Korean War, the adolescent Army Aviation continued the role it had played during World War II. New fixed-wing L-19 Bird Dogs and L-20 Beavers replaced the World War II-era L-4s and L-5s.

However, by far the most dramatic and auspicious change occurred with the introduction and development of a new type aircraft. In 1946, just before the separation of the Army Air Force from the Army, the Army had acquired its first helicopters—13 Bell YR-13s (later the H-13 Sioux). The Army Air Forces, and later the U.S. Air Force, trained all basic fixed-wing and primary rotary-wing pilots. The Army, however, established an advanced tactical training course at Ft. Sill in November 1948. More than likely, no one at that time had the faintest inkling of the role helicopters would ultimately play in the evolution and maturation of Army Aviation.

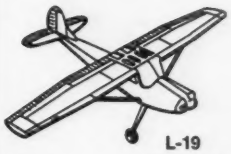
The Army planned the organization of five helicopter transport companies for short-haul air transport duty in Korea as early as 1950. The Air Force-imposed mission and weight limitations delayed the implementation of this plan. The only two Army transport companies that reached Korea before the end of hostilities were the 6th and the 13th. Reaching Korea in 1953, they used the H-19 Chickasaws that did not exceed the weight limitations.[3]

Other transport companies were to have used the heavier H-21 Shawnees; however, the Air Force refused to relax the weight restrictions to permit the Army's fledgling air arm to flex its muscles to that extent. Similarly, the Air Force and Marines used helicopters for medical evacuation as early as mid-1950. The mission limitations on Army Aviation, however, delayed the Army's following. Throughout the Korean War, Army Aviation was prohibited from providing close air support and other aviation functions for the Army Ground Forces.

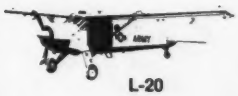
In 1951 and 1952, the Army and Air Force negotiated and agreed to two important new memoranda of understanding (MOU) regarding Army Aviation. In the first one, the Air Force agreed to eliminate the maximum weight limitations on Army aircraft, but at the same time reiterated the mission limitations. Included was the effective prohibition of Army aerial transport. Far more

1947
USAF

1950
Korean War



L-19
Bird Dog



L-20
Beaver

UH-19
Chickasaw

CH-21
Shawnee

[3] The 6th Transport Company was the first Army Aviation unit to be staffed by warrant officer aviators.

Near the end of the Korean War, the Army used the H-19 Chickasaw as its major transport helicopter.

significant to the maturation and to the specific course of Army Aviation was the 1952 MOU. This memorandum restored weight limitations on Army fixed-wing planes, but not on helicopters. Furthermore, it gave the Army "primary" rather than "emergency" responsibility to transport personnel, equipment and supplies within the combat zone that extended up to 100 miles.

The 1952 agreement added artillery and topographic survey and aeromedical evacuation to the mission of the Army Aviation to the existing functions: aerial observation; control of Army forces; command; liaison and courier missions; and aerial wire laying within the combat zone. Thus, as far as the use of rotary-wing aircraft in the combat zone, the 1952 MOU constituted a major step toward the coming of age of Army Aviation.

After the 1952 agreement, the major factor hampering the Army's wider use of helicopters was the inability of industry to meet the demand. The Army's aeromedical evacuation missions in Korea actually began before the Army was specifically authorized to conduct them by the 1952 MOU. For these missions, the most commonly used aircraft was its first helicopter, the H-13 Sioux. The H-19 Chickasaw was the major transport helicopter. The H-23 Raven was used occasionally besides the more common fixed-wing L-19 Bird Dog for reconnaissance. Other rotary-wing aircraft acquired by the Army near the end of or shortly after the Korean War were as follows: H-25 Army Mule (1953), CH-21 Shawnee (1954), CH-34 Choctaw (1955), CH-37 Mojave (1956) and UH-1 Iroquois (Huey) (1958).

The Move to Camp Rucker

1954 Camp Rucker

The Korean War fostered the growth of Army Aviation training and other activities at Ft. Sill. This contributed to an increasing problem of overcrowding at that post. In January of 1953, the Army Aviation School replaced the World War II-era Department of Air Training; then in 1954, the Army decided to move the newly created school to Camp Rucker, AL.

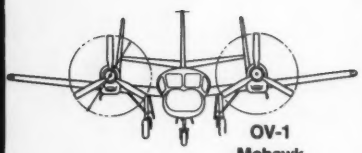
Originally opened as a training camp in 1942, Camp Rucker closed from 1946 to 1950. Used for training again during the Korean War, it closed again in 1954. The Army began looking for a permanent site for Army Aviation. Camp Rucker was not only an available post, but had additional advantages of Ozark Army Airfield nearby.

The move to Rucker occurred during the latter part of 1954. About the same time, the Army General Staff developed a working plan. This plan addressed important developments: immediate creation of an Aviation Branch for transferring all aviators to the new branch; establishment of an Army Aviation center at Rucker; and appointment of a branch chief. The plan was not endorsed by the chief of the Army Field Forces, but was distributed to the Army service schools and other commands for comment.

The Command and General Staff College, Infantry School, Armor School and staff of the Army Aviation School approved the plan. The commandants of the Army Aviation School and Artillery and Transportation Schools opposed the plan. The Army Field Forces recommended on 1 December 1954 that the plan not be presented to the Chief of Staff. The remembrance of the path taken by the pre-World War II Army Air Corps was still too fresh in the collective mind of the Army, including the individual minds of many Army Aviation leaders.

UH-1
Iroquois

In 1954 the Army Aviation School moved from Ft. Sill, OK, to Camp Rucker, AL. The Ozark Army Airfield, now Cairns Army Airfield, is pictured below.



OV-1
Mohawk

CV-2
Caribou

1954 Aircraft Maintenance Training to Army

1955 U.S. Army Aviation Center

1956 Army Aviation Training

Growth and Consolidation During the Late 1950s

Even with the rejection of the branch implementation plan, some of its provisions gradually were implemented during the mid-1950s. Other provisions influenced the evolution of Army Aviation during the following decades. There were two distinct trends toward the consolidation of Army Aviation beginning around 1954.

The first of these trends consisted of the Army's assumption, from the Air Force, of control over its own aviation activities— particularly maintenance and flight training. In 1954, the Department of Defense (DOD) transferred the primary responsibility for teaching Army aircraft maintenance from the Air Force to the Army. This led to the establishment of the Aviation Department within the Transportation School at Ft. Eustis, VA. The basic maintenance training already conducted by the Army at Ft. Sill had been moved to Camp Rucker with the transfer of the Army Aviation School.

The bulk of the maintenance training ended up at Ft. Eustis after 1954. This included training formerly conducted by the Air Force as well as most training programs established later. The Transportation School's assumption of primary responsibility for Army Aviation maintenance training firmly fixed it within the Army. This training was unnaturally separated from Aviation operations.

As for flight training, a very important DOD memorandum of 19 April 1956 directed the Army to assume responsibility for all Army Aviation training. Accordingly, the Army took over control of primary flight training for both fixed- and rotary-wing aircraft later that year. Wolters Air Force Base, TX, became the Army Camp (later Ft.) Wolters and the major facility for primary rotary-wing training between 1958 and 1973. In 1959, the Army moved its primary fixed-wing training from Camp Gary, TX, to Ft. Rucker. The training was conducted at Lowe Army Airfield.

The other major trend during the mid-1950s was further development and consolidation of Army Aviation as a distinct entity, albeit less than a branch, within the Army. In 1955, the U.S. Army Aviation Center was established to operate alongside the Aviation School at Camp Rucker. Control over Army Aviation personnel was centralized to ensure more efficient use of manpower while maintaining branch qualifications. The permanent status of the new home of Army Aviation was recognized by its name's being officially changed from Camp to Ft. Rucker. The following year, the Directorate of Army Aviation was established with Major General Hamilton Howze as the first director.

One negative feature of the 1956 DOD memorandum was the imposition of a 20,000-pound weight limitation for both fixed- and rotary-wing aircraft. At the same time, however, the memorandum permitted the Army to request exceptions to the weight limitations. By 1960, the Army had received DOD exceptions to weight limitations to procure both the OV-1

"Vanderpool's Fools" pioneered development of helicopter armament

Mohawk and the CV-2 Caribou.

Another significant development during the late 1950s was the arming of helicopters. The two people primarily responsible for this were Brigadier General Carl I. Hutton and Colonel Jay D. Vanderpool. BG Hutton was the first commander of the Aviation School at Ft. Rucker. COL Vanderpool was a nonaviator whom BG Hutton appointed to begin building and testing helicopter weapon systems. With daring and dedication, COL Vanderpool and his team pioneered the arming of helicopters. They came to be referred to appreciatively as "Vanderpool's Fools."

Mission and use restrictions on Army helicopters were not removed for another decade. BG Hutton's basis for creating and supporting these armed-helicopter experiments was questioned and debated. By 1957, however, numerous tests and demonstrations using machineguns and rockets on H-13s, H-19s, H-21s and H-34s were conducted. A sky cavalry unit—later called the Aerial Combat Reconnaissance Company—was organized. These tests at Ft. Rucker during the late 1950s, plus demonstrations there and elsewhere, led to the development of armament systems and airmobile tactics in Army Aviation units around the world.

In 1962, the Army Materiel Command created the Office of the Project Manager for Aircraft Weaponization. During the same year, the first U.S. armed helicopter company was activated in Okinawa. Under the command of First Lieutenant Robert Runkle, the company was deployed first to Thailand and then to Vietnam. There it flew escort for lift helicopters.

By 1961 then, a century had passed since the creation of the Civil War-era Balloon Corps. Both Army Aviation and the Army helicopter were on the verge of coming of age.[4]

For the second part of this historical review, the *Aviation Digest* will publish the recent history of Army Aviation in a future issue. This first part is not intended to add information or analyses to the already published literature on the subject, but to give branch personnel a brief history of Army Aviation.

Aerial combat reconnaissance companies tested armament systems on the CH-21 Shawnee.

1959
Fixed Wing Training to Fort Rucker

1962
Southeast Asia

[4] Published sources used in the writing of this summary include *Maurer Maurer, Aviation in the U.S. Army, 1919-1930* (Washington: Office of Air Force History, 1987); Richard K. Tierney, *Forty Years of Army Aviation* (Ft Rucker, AL: Aviation Center, 1982); Richard K. Tierney and Fred Montgomery, *The Army Aviation Story* (Northport, AL: Colonial Press, 1963); and Richard P. Weinert, *History of Army Aviation*, 1950-1962 (2 vols., Ft Monroe, VA: U.S. Continental Army Command and Training and Doctrine Command, 1971 and 1976).

AVIATION MEDICINE REPORT
Office of the Aviation Medicine Consultant

An Insidious Malady

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Army Comptroller Program
Syracuse University
School of Management
Syracuse, NY

WE WERE RETURNING from a long, boring reconnaissance mission, in the middle of the night, in our RU-21 Ute. The crew was tired, and we were still a little irritated at being called to fly this mission at the last minute. Personally, I was looking forward to a warm bed. I hoped I could make it there by 0300 hours. I noticed that for the last few minutes, the guys in the back were loosening up a little and seemed to be laughing about nothing in particular.

We had just passed our last checkpoint and soon would start our descent from 22,000 feet. The copilot took the controls as I made the last entries in the flight log. For some reason (I assumed I was just tired) my vision seemed to be a little blurred, and I was having a hard time concentrating on the log. Once again, I checked my watch to enter the time in the log, but the dial appeared a little fuzzy. I looked over at the copilot because I felt some minor changes in aircraft attitude. Not only was he having some trouble with his control touch, but also he had a silly looking smile on his face and his lips were turning a purplish color. It was all so funny that I started laughing and couldn't stop. The guys in the back were becoming hysterical, and I heard a thud as one dropped his clipboard. My breathing rate started to increase and soon became almost uncontrollable.

"What's wrong with me? What's happening?" I wondered. "You would think we have hypoxia, but we're breathing oxygen. We're breathing oxygen unless the tanks are empty. . . ."

The previous fictional account is not as farfetched as you might think. Similar incidents have occurred, and hypoxia may affect other crews as well in the future. It is not just a malady that fixed-wing crews need to worry about, though. Members of the "low and slow community" also should recognize hypoxia. The simple fact is that every helicopter in the inventory has a service ceiling of more than 15,000 feet. This is more than enough to give you symptoms of hypoxia. Hypoxia may affect you at relatively low altitudes by restricting your night vision, for example.

Numerous mishaps have occurred recently involving both fixed- and rotary-wing aircraft. How would you like to become hypoxic while taking an instrument renewal? I don't know about you, but I don't need hypoxia to add to any problems. Hypoxia affected an individual while he was taking his checkride out west. During warm weather and visual meteorological conditions at 10,000 feet mean sea level (MSL) in a UH-1H Huey, the instrument examiner noticed the pilot becoming unusually slow answering radio calls and identifying intersections. The pilot flew through the localizer for the approach he was to perform and laughed about it after he finally recognized it. However, he made no attempt to correct the situation.

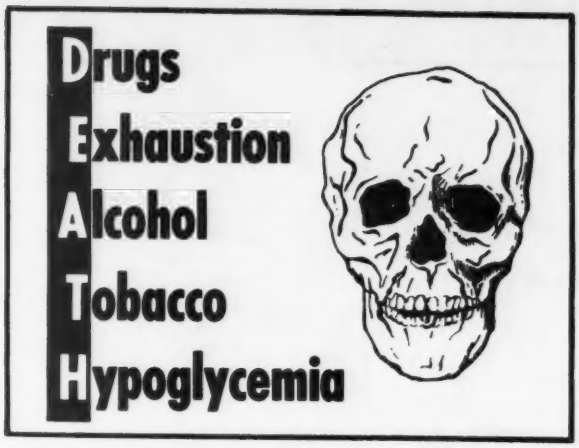
After air traffic control advised the pilot to take corrective action, the examiner helped the pilot to get back on course for the descent. By the time they had reached the decision height for the approach, the effects of hypoxia had subsided. This pilot was flying at what is normally considered a safe altitude, but the combination—high altitude, 5 hours of sleep the night before, high ambient temperatures, no breakfast, no lunch (except soda and candy bar) and two packs of cigarettes a day—raised his physiological altitude above normal.

On another occasion, an OH-58 Kiowa was on a night cross-country flight well below 10,000 feet when it encountered instrument meteorological conditions. After the Kiowa was in the clouds for 30 to 45 minutes, the engine failed. In reacting to the engine failure, the pilot performed an improper complex physical action. In other words, he waited

too long to put the collective down, which allowed the rotor revolutions per minute to drop below the green. The pilot then made several excessive uncoordinated control inputs.

The investigation board made several findings, but also strongly suspected the pilot was well into the compensatory stage of hypoxia, estimated at least 15,000 feet MSL. The pilot was a heavy smoker. The symptoms of hypoxia slowed his reaction time and exaggerated his fine motor skills, which resulted in a sloppy control touch.

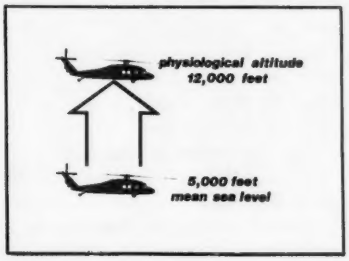
Do you get my drift? You don't have to be in a fixed-wing aircraft at 23,000 feet to become hypoxic. Hypoxia can strike at much lower altitudes as well, especially if you indulge in any of the self-imposed stresses, including drugs, exhaustion, alcohol, tobacco and hypoglycemia.



Self-imposed stress can lead to debilitating fatigue or death.

What exactly is hypoxia? It's simply a condition resulting from lack of oxygen in the blood or cells of the body that may result in some impairment. In other words, it's going to prevent you from doing your job, which is the safe, efficient operation of the aircraft. Hypoxia affects the cellular level and disrupts normal body functions. Certain parts of the body have the highest requirement for oxygen—namely the visual system, heart and central nervous system. These tissues obviously are affected more readily and more severely than other tissues. Hypoxia is particularly dangerous because its signs and symptoms usually do not cause discomfort or pain. Because the onset of many symptoms are subtle, crewmembers may not notice them during flight.

Indulgence in the self-imposed stresses can raise your physiological altitude making you much more susceptible to hypoxia.

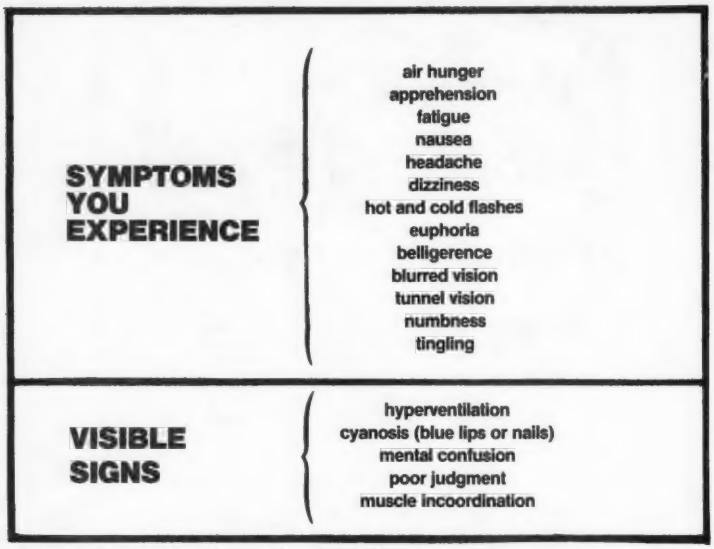


There are four different types of hypoxia, but one the aviator will most likely encounter at altitude is *hypoxic* hypoxia. This results from the lower partial pressure of oxygen at high altitudes. As the atmospheric pressure decreases with altitude, the partial pressure of oxygen also decreases. This narrows the pressure gradient between the ambient pressure and the partial pressure of oxygen in the blood stream. The result is decreased gaseous diffusion of oxygen that likewise decreases the oxygen saturation of the hemoglobin in the red blood cells.

What's the result? As the saturation rate decreases, the cells of your body receive an insufficient supply of oxygen that may result in a variety of signs and symptoms. It's practically impossible to predict exactly when, how or at what altitude hypoxia symptoms will occur, because humans vary in their susceptibility to hypoxia.

Hypoxia has many signs and symptoms. However, most people normally experience only a few symptoms that recur in subsequent episodes of hypoxia. That's why altitude chamber training is so useful. It's relatively easy to learn your symptoms in the chamber. Then, hopefully, you will be able to recognize what's happening to you in the aircraft before it's too late.

Many people have a general sense of apprehension—that something is wrong when they start feeling the effects of hypoxia. One of the first respiratory effects of hypoxia is air hunger. This is an increase in the depth of breathing, followed by an increase in the respiratory rate. As previously stated, hypoxia greatly decreases the performance of the visual and central nervous systems. At altitudes ranging from 4,000 to 6,000 feet, you will start losing your night vision. Blurred and tunneled vision may follow at higher altitudes. Intellectual impairment occurs, causing slow thinking, fixation, loss of memory, appre-



Possible signs and symptoms of hypoxia that lead to unconsciousness.

hension and overall poor judgment.

Changes in personality, such as euphoria or belligerence (the happy-drunk or mean-drunk syndrome), may be noticed by the individual as well as by others. A loss of muscle coordination results as the nervous system becomes starved for oxygen. An abnormal rate and depth of breathing (hyperventilation) and a blue or purplish tint of the lips or skin (cyanosis) may develop as well.

Aircrews experience three other common types of hypoxia. Indulgence in any of the self-imposed stresses may contribute to your susceptibility and raise your physiological altitude. In other words, because of the effects of smoking, alcohol or other stresses, you increase susceptibility to hypoxia. While you fly at 5,000 feet, because you've indulged in the self-imposed stresses, your physiological altitude may be 12,000 feet. Therefore, you are much more susceptible to hypoxia symptoms.

Hypemic hypoxia is caused by a reduced oxygen carrying capacity of the blood. Carbon monoxide, often the villain, is significant to aircrews because it is present in the exhaust fumes of aircraft. Probably more significant is its presence in cigarette smoke. Carbon monoxide bonds with the hemoglobin in the red blood cells about 200 times more readily than oxygen. It prevents the blood from carrying a sufficient amount of oxygen, and hypoxia is the result. Average cigarette smokers tie up 8 to 10 percent of their hemoglobin with carbon monoxide, which adds about 5,000 feet of physiological altitude. Anemia and blood loss also may contribute to hypemic hypoxia.

Histotoxic hypoxia results when tissue cells of the body cannot use oxygen. The cells have been poisoned by something that interferes with the body's ability to normally use oxygen efficiently. One of the big culprits is alcohol, but also some drugs and poisons, such as cyanide, can cause histotoxic hypoxia.

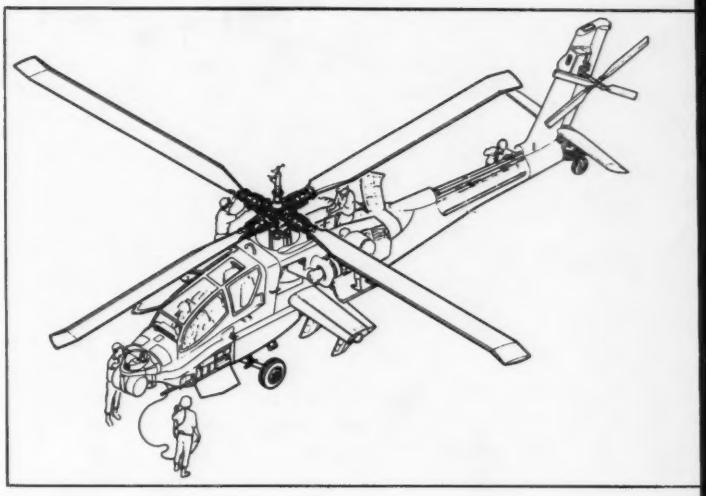
Stagnant hypoxia occurs from a pooling of blood (such as from high G maneuvers) or a reduction in cardiac output (such as heart failure or shock). This is simply a restricted blood flow. When your foot or leg "goes to sleep" from sitting in an awkward position, you experience stagnant hypoxia.

The prevention of hypoxia is really quite simple. Avoiding the self-imposed stresses eliminate those factors that will raise your physiological altitude. Limiting your time at altitude will help. AR 95-1, *Flight Regulations,* sets restrictions limiting time at altitude without supplemental oxygen. The use of supplemental oxygen, as well as a pressurized cabin, definitely helps prevent hypoxia.

The treatment of hypoxia is likewise simple. If you have an oxygen system onboard, start breathing oxygen immediately and place the regulator in the emergency setting. The recovery from hypoxia usually occurs within seconds, though some mild symptoms may persist for a short time. If you do not have oxygen, descent to a safe altitude will increase the partial pressure of oxygen and help you recover from the symptoms. A safe altitude is normally 10,000 feet or below. However, remember that indulgence in the self-imposed stresses may lower your "safe" altitude and prevent your symptoms from dissipating until you are well below 10,000 feet.

The Aviation Medicine Report is a monthly report from the Aviation Medicine Consultant of TSG. Please forward subject matter of current aeromedical importance for editorial consideration to U.S. Army Aeromedical Center, ATTN: HSXY-ADJ, Fort Rucker, AL 36362-5333.

History of Apache Maintenance Training



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THE AH-64 APACHE helicopter is one of the most advanced weapons systems in the U.S. Army. Its ability to deliver accurate fire and total destruction to enemy forces is unequaled by any other helicopter in the world. Its night-fighting capability makes it an around-the-clock threat to enemy forces. We are so awed by the Apache's warfighting potential that many times we forget that its capabilities are ultimately no better than the mechanics trained and assigned to maintain the helicopter. The Aviation Logistics School's Advanced Attack Helicopter Division, Ft. Eustis, VA, is dedicated to providing the AH-64 maintainers the best maintenance training possible.

On 3 February 1983, building contractors started the construction of a new training facility designed specifically for Apache maintenance training at Ft. Eustis. The facility was designed so that all AH-64 maintenance training, including maintenance test flight, aircraft systems and trades training, could consolidate under one roof.

The initial cost estimate for the facility was $3,065,000, but increased to $3,427,000 because of environmental and utility upgrade requirements. In January 1985, the Army accepted part of the new training facility, initially establishing administrative areas and setting up classrooms. A few months later, the hangar portion of the building was completed and ready for aircraft maintenance training to begin.

The training facility was dedicated on 23 October 1987 as Ottenberg Hall in honor of Chief Warrant

Officer, CW4, Barry B. Ottenberg. CW4 Ottenberg was a pioneer in establishing and developing AH-64 maintenance training at Ft. Eustis. He provided valuable assistance to the facility design, training device requirements and program of instruction content. Before he could see his training efforts become reality, a heart attack claimed his life.

The first maintenance training in Ottenberg Hall was the 67R instructor and key personnel training (IKPT) class that began in April 1985. McDonnell Douglas Helicopter Company personnel taught the first two Apache IKPT classes to Army noncommissioned officers (NCOs) and other key personnel. The same personnel then helped the Army instructors teach the next two 67R IKPT classes. The 67R course was 12 weeks long of which the first 10 weeks were devoted to the AH-64 aircraft and its related systems. The last 2 weeks of the course taught the new instructors how to use the recently acquired modern Apache panel. The class also taught them how to use computer assisted training devices.

The NCOs selected to become the first Apache maintenance instructors were all experienced and qualified for other aircraft. They had their work cut out for them from the start. Not only did they have to learn a new aircraft and its systems, they also had to organize and set up training for their first classes. The new instructors were continuously reviewing AH-64 maintenance manuals and submitting required changes. It was a never-ending process, because engineering proposals were being changed on the Apache faster than manuals could print them. The IKPT class evolved into the 67R20/30 transition course. This course and the 67R10 entry level course were the first classes taught by the Advanced Attack Helicopter Division instructors without McDonnel Douglas Helicopter personnel assistance. Both courses were taught for the first time in August 1985.

A total of 122 AH-64 personnel were authorized by the Advanced Helicopter Division's table of distribution and allowances (TDA) to teach the first courses. The TDA has grown each year to keep pace with the Apache-associated courses. The current TDA now authorizes the Advanced Attack Helicopter Division 139 military and civilian personnel.

In 1985, the 68FX1 Electrical Course was the first Apache maintenance additional skill identifier-producing course taught at the new

maintenance facility. The rotor, hydraulics and armament repair courses came later. The Armament Repair Course is the only course designed to train both officer and enlisted maintenance personnel. Courses designed to train 66R20 and 66JX1 technical inspectors also were developed and taught during this time. A total of 10 different programs of instruction (POIs) were developed.

The Apache maintenance training student load has steadily increased every year. In fiscal year (FY) 1985, 73 students were trained. Since then, that number has increased more than tenfold with 824 students trained in FY 1988. Figures for FY 1989 project that 1,130 students will receive Apache maintenance training. Future year projections continue to forecast student increases.

The Apache training program generated the development and resulted in the purchase of highly sophisticated maintenance training devices. These training devices are designed to simulate normal, abnormal and emergency operations for the maintenance student. Most of the training devices were on hand in the spring of 1985 and have enhanced the Apache maintenance training from the start. The first Apache helicopter designated for use as a maintenance training aid also arrived at Ft. Eustis during this time.

Three of the Apache training devices are located on the hangar floor. Instructors can program these trainers to demonstrate a normal operating system. They also can program malfunctions into the system to help teach the student proper troubleshooting techniques. The AH-64 A1 composite trainer is used to teach operation and maintenance of hydraulic, fuel, electric and pressurized air systems. The A2 flight controls and powertrain systems trainer helps the student understand the flight controls and powertrain systems and how they interface with the main transmission, main rotor and hydraulic system. The A5 armament fire control and visionics trainer is used to train the maintenance student on those systems associated with the weapons systems. These three training devices cost $5.3 million, $1.1 million and $2.7 million, respectively.

Scattered throughout the classrooms in the Apache maintenance training facility are various panel trainers costing more than $500,000. Classroom and individual-sized mainframes are equipped with interchangeable panels representing each of the AH-64's subsystems. These panel trainers also have a computerized fault-insertion capability to allow training in fault-isolation procedures. Panel sets can be easily removed and installed with these trainers to provide the student troubleshooting techniques training on the pressurized air, digital automatic stabilization, electrical, fuel, fault detection/location system, hydraulic, and anti-ice systems, as well as mission equipment.

In addition to the specialized training devices previously described, the Apache maintenance training requires more than 270 individual bench maintenance components totaling in excess of $7 million. Bench maintenance components are individual aircraft components or assemblies used as training devices.

The projected increase in student load is driving a requirement for additional training devices. Four armament-electrical system trainers are required for training in maintenance operational checks and fault isolation procedures. To improve training in removal and installation of components, procurement of 15 hardware part-task trainers is also required. These devices will ultimately replace 14 AH-64 maintenance training aircraft. They will allow the return of the aircraft to the operational fleet and result in a cost savings of more than $100 million over the life of the aircraft.

The Advanced Attack Helicopter Training Division provides quality training to its students. Never satisfied with the training, the Apache instructors are constantly reviewing the POIs and looking for other means to improve the training effort. The instructors try to maintain close contact with Apache field units to ensure the training division is teaching the proper tasks and emphasizing the most important maintenance procedures. Suggestions are always welcome from maintenance personnel in the field.

The Apache units indicate the Advanced Attack Helicopter Division is sending well-trained aircraft maintainers to the field. The AH-64 maintenance training has come along way since the McDonnell Douglas Helicopter Company trained the first Army instructors in 1985. Moving into a new facility and obtaining sophisticated training devices were great boosts to the training program. However, the new facility and the training devices would be of little benefit if it were not for the motivated, dedicated noncommissioned officers and civilian instructors who make the Apache maintenance training program a success!

Flying Machines and Indians

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EVER WONDERED WHY U.S. Army helicopters have Indian names? Aviators offer diverse answers to this question. Some believe that the CH-47 Chinook is named after the strong winds its name denotes and the jet wash from its rotor blades. Others say helicopters have serpent names because of their viciousness.

Well, the answer is somewhat complex. Former Army Regulation 70-28 stated that Army aircraft will be named after American Indian terms, tribes and chiefs. Such popular names appeal to the imagination and reflect mobility, agility, flexibility, firepower and endurance of the equipment.

Few machines have had as much creativity and color in the evolution of their names as the helicopter. Before arriving at the popular name we know today, a metamorphosis occurred with the word helicopter.

In 1863, a Frenchman, Viscomte de Ponton d'Amecourt, originated the name "helicopter" by combining the Greek word "helicos" meaning "helix" and "pteron" denoting "wing"; thus, "helicoptere." The last "e" was later dropped in the United States to keep with English form.

Consider the UH-60 Black Hawk, AH-64 Apache, OH-58 Kiowa, UH-1 Iroquois (commonly called Huey) and Chinook, which are some of the Army's flying machines with Indian names.

The history of the Black Hawk bears telling. Chief Black Hawk was a champion of Indian chiefs. His ancestors roamed the plains of Kansas, Iowa and the fertile fields of the Black Rock Valley in Illinois. The truth told, most men would not say he had courage. Courage spoke when he defied a government order to turn over more than 50 million acres of land supposedly given to the United States by a tribal spokesman in 1804. Few would acknowledge he was a hero; but few receive an honor like Chief Black Hawk of having a war named after them. Most of Chief Black Hawk's Indians were slaughtered in a massacre at Bad River, WI. The chief escaped but was later taken hostage by his enemy, Keokuk. History says he never recovered from this blow to his pride.

Rarely do people receive honor and glory while they live. Likewise, Chief Black Hawk did not. He lived by fighting and being hunted by the white man. Conversely, generals and presidents honored him when he died. A military uniform with a sword, gifts from General Andrew Jackson and a cane from Henry Clay clothed him for burial. Medals rested on his chest from General Jackson and President John Quincy Adams.

Perhaps it was not only the fierceness of Indian chiefs such as Chief Black Hawk but also their followers' courage and valor that were brought to mind when the Army adopted the policy to rename its fleet after Indians and related places. In fact, much publicity and ingenuity by the aviation community occurred when naming the UH-60A.

The naming of the aircraft started in March 1977 with a "Name that Bird" contest. The

Aviation Digest solicited popular names from the Army Aviation community. Six hundred people submitted 268 popular names for the Utility Tactical Transport Aircraft System (UTTAS).

Among the names submitted were Aleut, Cree, Frog, Hop, Kaw, Kickapoo, Mohican, Nakoa, Opeechee, Popogou, Pomo, Puma, Sachem and Yaqui. On 25 August 1977, the UTTAS was named Black Hawk.

Black Hawk pilots, among others, believe in their aircraft. Many people are reluctant to swear by their Bibles. This is not the case for Chief Warrant Officer, CW2, Jerry Blessing, a Black Hawk instructor pilot in C Company, 1-223d Aviation, Aviation Training Brigade, Ft. Rucker, AL.

"The Black Hawk, a utility helicopter, can fulfill any role," said CW2 Blessing. "It can provide medical evacuation and troop support, haul external loads and internal and external fuel tanks and can even self-deploy to Europe," he said. "I'd swear by the Black Hawk. It's a sound tactical machine and was the first built for crash survivability keeping the pilot and crew in mind," he said.

The history of the Apache is equally interesting. Like the attack helicopter, the Apaches were quick hitting, high speed and could get in and out of the battle. They were called the fiercest Indians to fight on the frontier. The ablest Apache chiefs were Mangas Colorados and Cochise. Cochise went on the warpath in 1861, which was the beginning of a quarter century of fighting in the Apache and Navajo wars. Mangas Colorados was murdered during the Civil War and Cochise agreed to peace and a reservation for his followers in 1872. The Apaches' domain extended over what is now Arizona, Colorado, New Mexico, Texas and Mexico.

As his father before him, Geronimo became a brave and skillful fighter but more ruthless than Cochise. The day of 5 September 1886 was a day of celebration. History tells us that never had word spread so fast and so many people rejoiced as when Geronimo surrendered to Brigadier General Nelson A. Miles at Ft. Bowie, AZ, near the Mexican border.

Telegraphs flashed the message, "Geronimo captured." Newspapers were calling him a "red-handed murderer...cruel." What could cause a warrior to earn such a callous reputation? When war broke out between the United States and Mexico in 1846, Geronimo's wife, mother and children were all killed. From then, Geronimo began leading raids and attacks against the Mexicans. Writers say he killed Mexicans wantonly because he wanted to see them die. He killed Americans across the border during food raids. Geronimo thought no bullet would kill him. He was right. He died in 1909 of pneumonia.

Like Geronimo and the Apaches, the Apache helicopter is a hard and fast hitter. The Army's newest attack helicopter has been coined a "flying arsenal." Its state-of-the-art systems include laser rangefinder and designator, infrared radar and laser spot tracker. The Apache is self-deployable, ready for battle on arrival and capable of "fighting, surviving and living with troops in a frontline environment."

Chief Lying-Down was said to be the most feared and hated of the Plains Indians around 1790. But one of the most brilliant and belligerent of Kiowa chiefs was Satana. Some called him sharp as a briar and the most dreaded warrior of the plains. Others said his name suggested femininity for "satan." Nonetheless, he was outspoken. While acting as chief spokesman for the Kiowa peace treaty negotiations at the Medicine Lodge Council, Satana accused the White Man of taking their food and freedom and then deceiving the Indians. He sullenly signed the treaty. Shortly

Flying Machine and Indians

thereafter, Satana was seized and taken hostage by General George Armstrong Custer to enforce the peace treaty. He committed suicide by jumping from an upstairs window of a Texas prison.

Still, he was recognized as eloquent and sincere, and even of princely stature. Historians claim that he looked elegant in the prison garb. General Hancock gave him a major general's coat.

The Kiowa's migration took them to eastern Wyoming near "Devil's Tower," upper Missouri, the Yellowstone area of Montana and Kansas. A Kansas county near the Arkansas River, where they lived before being removed into the Indian territory, is named after them.

Their namesake, the OH-58D Kiowa, is part of the Army Helicopter Improvement Program. The light observation aircraft is equipped with a mast-mounted sight device, which magnifies 12 times using a television camera; an autofocusing, thermal-imaging sensor; and a laser rangefinder. The Kiowa accommodates a pilot and copilot observer.

Labels such as solicitous and seekers of favors followed the Iroquois Indians. This tribe included five nations—Seneca, Cayuga, Onondaga, Oneida and Mohawk. The language of the Cherokees and Tuscaroras was common with that of the Iroquois. At one time, the Iroquois were sole possessors of Lake Michigan. Representatives from the Iroquois and other tribes surrendered their claims to land near the Ohio River for worthless trinkets. After realizing they had been taken in, many tribes went on the warpath.

Often called knavish and cruel, the Iroquois had a superior political organization and an arsenal of firearms provided by the Dutch West India Company. They exterminated their enemies under the guise of intertribal peace.

The UH-1 utility helicopter is best known by its common name, Huey. It serves as the "workhorse" of Army Aviation to transport soldiers and equipment and to train future Army aviators. It is certainly remembered for its role in Vietnam. Many of the aircraft carry wounds like many of the soldiers who fought there.

Finally, the Chinook Indians compose an extremely small tribe that is now fused with the Chehalis Indians. They were first described by Lewis and Clark in 1805. The Chinooks lived on the Columbia River. One distinctive characteristic of Chinook culture is the practice of head deformation. Infants' heads were flattened by pressing a padded board against the forehead.

Noted for making canoes, the Chinooks were well known for their trading and shipping of goods.

Easily recognized for its dual tandem rotor blades, the CH-47D Chinook cargo aircraft can transport up to 50,000 pounds. This includes an external load of 28,000 pounds. Its versatility allows it to—

- Move troops.
- Support battlefield resupply.
- Serve as primary mover for equipment, such as the M198 towed howitzer gun, artillery pieces and ammunition.

Isn't it ironic that the Indian, who was yesterday's first American inhabitant, still plays an important role in naming today's Army flying machines? It will be interesting to see what the next generation of helicopters will be named.

Let's Get Together

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EVER SINCE AVIATION units went under the Combat Arms Regimental System, there has been confusion on how to write, and how to speak, the new designations. This is not a problem for our friends in the Infantry, Armor, Artillery and Cavalry. They have been under the system for a long time. But it's new to many of us. Some have drawn on their experience in what we used to refer to as the combat arms, and have been writing our designations properly; others have not.

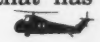
The problem lies in the use of the slash or slant (/), and in the use of the words battalion and regiment. No such unit as the 1-10th Aviation Regiment exists. That's right. No such unit exists. It's the 10th Aviation Regiment, not the 1-10th. The 1 refers to the First Battalion, which is part of the regiment. It would be correct to write (or say) 1st Battalion, 10th Aviation Regiment, which is fine for official correspondence or letterheads. However, the use of the entire designation is unwieldy when printed on a sign or used in speech or notes. Since the regimental concept is new to us, we tend to want to use it all the time. That is when we get into trouble. We say 1-10th Aviation Regiment when we should say 1-10th Aviation Battalion. We are, after all, speaking of the battalion and not the regiment. Or we could follow the lead of our friends in the Infantry, and others, and say (write): "1st Battalion, 10th Aviation" (regiment is understood) or simply: "1-10th Aviation" (both battalion and regiment are understood).

Also no such unit as the 1/14th Aviation Regiment exists. As discussed in the second paragraph, the word regiment should not be used because we are speaking of the battalion and not the regiment. In addition, the slash is used only between levels of command. Since the 14th Aviation Regiment does not really exist; that is, no such headquarters in the chain of command exists, a slash should *not* be used. In this example, the next higher level of command for the 1st Battalion is the Aviation Training Brigade. Although this battalion is affiliated with the 14th Aviation Regiment, the regiment is not in its chain of command. Therefore, the two numbers should not be separated with a slash. A hyphen should be used instead.

To support this concept, the following extract from Field Manual (FM) 101-5-1, *Operational Terms and Symbols,* is provided:

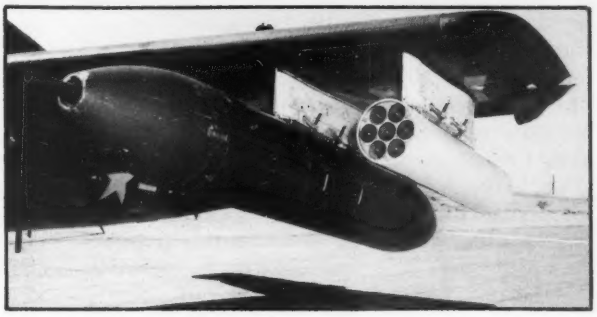
> "...higher echelons of command...are separated by a slash. For those units identified under the Combat Arms Regimental System (CARS), but assigned to a brigade rather than a regiment, both the battalion and traditional regimental numbers are shown; i.e., 1-25, 3-40. To avoid confusion with different levels of command, both numerical designations of the CARS unit are always written together and separated by a hyphen rather than a slash..."

Admittedly, FM 101-5-1 deals primarily with map symbols; however, it's the best source of information available. If another Army publication supersedes FM 101-5-1, this writer is unaware of it. Unless another reference exists that has precedence, please, let's get together.



MONTHLY WRITING AWARD

The Tchepone Navy



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THAT VAGUE FEELING of excitement a warrior sometimes gets just before going into battle—a certain hint of expectancy that comes over him without his really knowing why—stirred me out of a deep sleep. So I dressed quickly, stepped from my quiet hootch and headed toward operations. Already the morning sky promised another hot Vietnamese day. The sand scrunched faintly with the movement of my steps. The time was mid-1967 during the height of the Vietnam conflict; I was the flight leader of a platoon of OV-1 Mohawk reconnaissance aircraft tasked with a continuous mission of visual observation along the Ho Chi Minh Trail in Laos.

As I trudged toward operations, my thoughts concentrated on the coming flight. That's when it dawned on me. The idea slipped so quietly into my still sleepy thoughts that I didn't realize then it would soon prove the long sought key to the secret of "The Tchepone Navy."

Still feeling expectant, I climbed into our operation's van. There, amid the soft whir of the air-conditioning and the dim interior lighting, I found "Soldier" Joe Robinson busy with a thick stock of obscure intelligence reports. Soldier was our chief intelligence officer. He got his

The OV-1 Mohawk (above) is a highly specialized aircraft, and during the Vietnam era some were equipped with a variety of armament such as .50-caliber machineguns and 2.75-inch rockets (left).

nickname from his excessive devotion to the intelligence business. True to his upbringing, he simply threw me a nod and launched directly into his terse preflight briefing.

"There wasn't much SLAR (side looking airborne radar) activity in your area last night and the little that we got was isolated. IR (infrared) drew a complete blank. Hillsboro's frequencies today are 295.8 and 47.6. Your maps have been posted. Last, but not least, there have been no reports of any new AA (antiaircraft) activity in your area. Any questions?"

"None here." I replied with a mock salute, then retreated into the corner long enough to check the weather reports before heading to the pilot's briefing room. Translated briefly, I had just been told that the previous night's surveillance flights had produced little information that would be of benefit to my flight this morning. Our unit had both a day visual reconnaissance section as well as a night electronic surveillance section. It was common practice to crossfertilize information between sections.

The pilot's briefing room was dark and empty. As I flicked on the lights, I brushed away the ever-present cobwebs of fear that always manage to lurk in the corners of the minds of pilots who must fly into enemy-held territory, and, as flight leader, I concentrated on planning the coming mission. We would be flying two OV-1s armed defensively with 2.75-inch rockets and .50-caliber machinegun pods. Our mission: visual reconnaissance of the Ho Chi Minh Trail. We were to search out and report any signs of recent enemy activity along the trail. This permanent mission was assigned to our unit, and we flew daily along the trail in search of "Charlie."

The aircraft we would be flying is uniquely suited to the task of visual reconnaissance. Even though it has now been in active service for more than 25 years, it is still an oddity among aviation circles. Little is known about this remarkable aircraft since its original confidential nature cloaked it in an aura of secrecy. Technically, the OV-1 aircraft is a medium-range reconnaissance aircraft powered by two turboprop engines and built by Grumman Aircraft Corporation. It is a powerful aircraft with the pilot and observer seated side-by-side in a bubble canopy located at the front of the aircraft. Thus, visibility is excellent in all directions, but this seating arrangement gives the aircraft the appearance of some strange, huge bug.

This appearance, coupled with the tremendous performance and Grumman "Iron Works" reliability, has embedded the OV-1 in the hearts of the people who fly it. Imagine for a moment an aircraft with such instrumentation, yet flown by only one pilot; an aircraft capable of both sophisticated electronic surveillance missions, as well as close air support; an aircraft sturdy enough to survive a forward field environment. You have just described the OV-1.

Even though the OV-1 is spectacular from a pilot's viewpoint, the surveillance capability of this aircraft has earned it a unique position among warbirds. Not only is the Mohawk an excellent platform for the visual reconnaissance role, but it also is capable of "Sneaky Pete" electronic surveillance that had proven invaluable in the continual struggle to ferret out the enemy in Southeast Asia.

For today's visual reconnaissance mission, I decided to enter our observation area from the east to keep the sun to our backs. I wanted to concentrate our main efforts on the critical Tchepone area in hopes of finding the enemy ferry that had been eluding our detection for so long; hopefully, my idea would produce some results. At any rate, the Tchepone ferry was a challenge that I could not ignore even though Tchepone was the most heavily fortified AA area in all of Laos and evoked an aura of fear because of the large number of aircraft that already had been lost in that area.

The Tchepone Navy

I reviewed the events that had led up to the present situation: During the last rainy season, Charlie's vehicular activity along the Ho Chi Minh Trail had completely stopped. By the start of the present dry season, the trail was overgrown and devoid of any signs of usage. As a result, once Charlie began to reuse the trail, it was easy to keep track of his progress south, even though he used his trucks only at night and kept them hidden during the day. When Charlie reached the Tchepone area, we had expected him to use the previous year's fording site (figure 1), but he had a surprise for us. Within the span of a single night, Charlie had built a new fording site just to the north of the old ford! The old ford was still visible with its truck tracks and bomb craters, but now Charlie had a new ford, complete with smooth approaches and obvious evidence that the fording sited recently had been used.

Or was it a ford? The first visual recon crews that flew the area reported it as a ford, but maybe they were just assuming it to be a ford because the previous crossing had been a ford. Tony Brown, our most experienced recon pilot, was the first to question the reports of a ford.

"A recon pilot only reports facts, boys, not suppositions," was Tony's favorite saying. "I haven't been out there yet, but as I recall, the water north of the old fording site is too deep to ford vehicles; so I'll bet you it's a ferry site instead of a ford. Besides, why should Charlie build another fording site when the old one is still usable?"

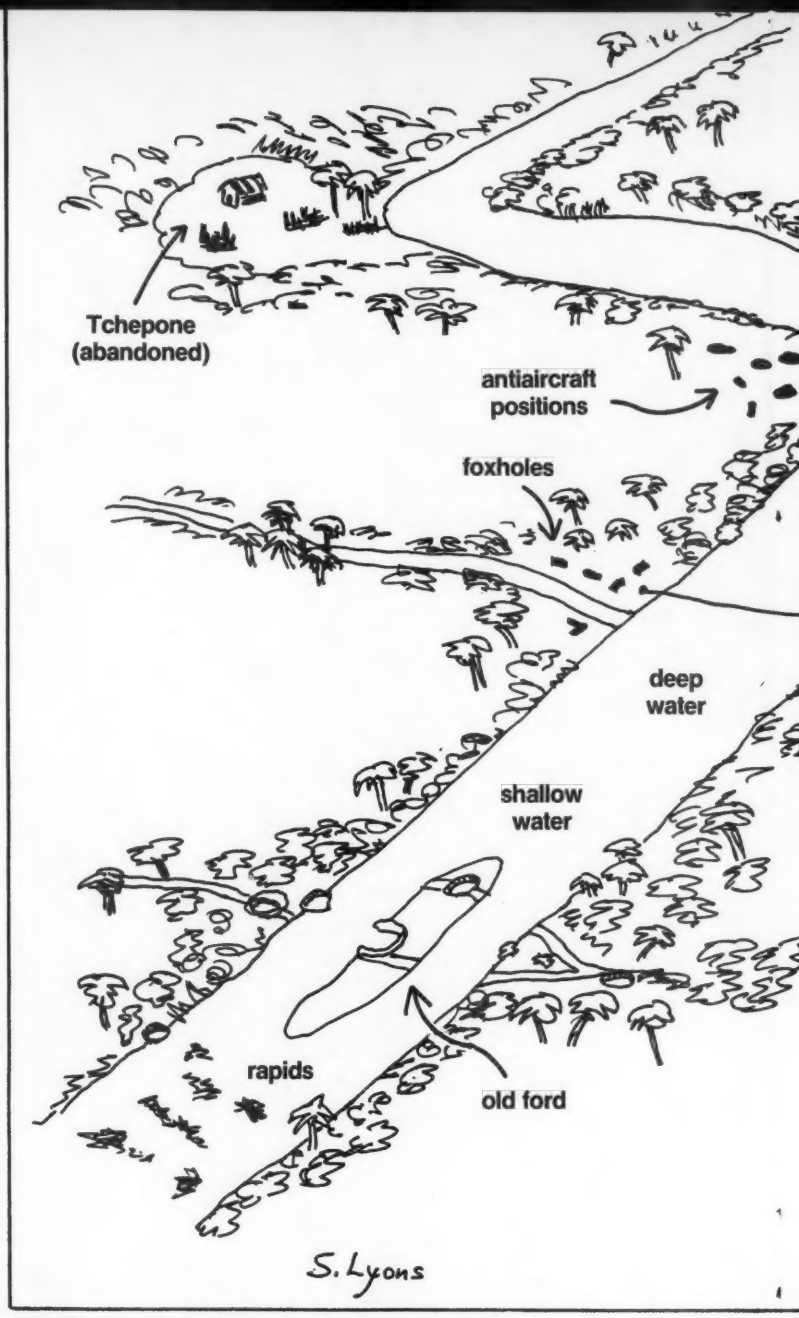
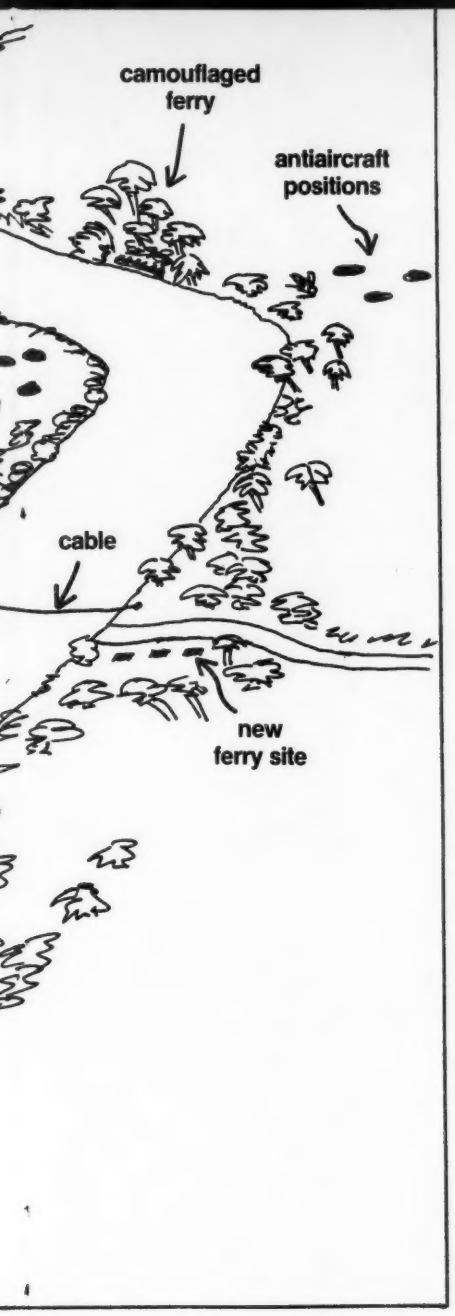


FIGURE 1: Tchepone area fording site used by the enemy forces.

Tony's remarks were enough to make us question the original report, so we waited for a lull in enemy AA activity to allow us to reexamine the ferry/ford area. Because of the intense AA build-up in the Tchepone area, we didn't fly daily missions there. We varied both our flight times as



well as our flight paths to provide an element of protection.

At the next opportunity, we reassessed the ferry/ford area. Sure enough, Tony's suspicions were confirmed! Visually, we could not determine the exact depth of water at the new site since we couldn't see the bottom of the stream, but we could tell that it was too deep for fording. Furthermore, the aerial photos that we took with our aircraft cameras provided conclusive proof that it was a ferry site; our imagery interpreters found a cable stretching across the stream on the north side of the site.

A wave of excitement swept through the visual recon section. Clearly, here was a challenge out of the ordinary: to find the ferry that belonged to the ferry site. We began our search with a skull session in the club.

"Chances are it's not a portable ferry so it must be hidden somewhere near the ferry site," started off Tony.

"Agreed, and we should be able to limit our area of search by finding out where the rapids are," chimed in another. "Nobody in his right mind would drag a ferry over a rapids every night!"

"And the farther they get away from the site," I added, "the harder it is to move the ferry back and forth each night, so there's probably some practical limit as to how far away the ferry can be."

We all agreed. The next day, with the aid of our maps, we found a rapids to the south of the old ford, which would probably be the southern limit of our search. And, although there were no rapids to the north of the old ford, Charlie would probably not go around the bend in the river because of the half-mile distance involved. Thus, we had our search area mapped out and our search soon began in earnest. We would find and "dispatch" the ferry, which by now had been dubbed The Tchepone Navy in the club.

A week or more passed with no one turning up any results, and attention started to drift to other areas. Then, after more than 3 weeks without a trace, the ferry was no longer the center of attention. Yet, somehow, I could not get The Tchepone Navy out of my mind. I was convinced that we could find the ferry. That's when I had my little idea. Just how accurate had been our supposition that Charlie would not go clear around the bend of the river to the north? Maybe we had outguessed ourselves, so why not put a little effort into searching around the bend in the river?

The entrance of the rest of my flight crew interrupted my thoughts. With a "Good morning, guys, shall we begin?" I launched into the preflight briefing. As a flight leader, I knew that the more detailed the preflight briefing, the smoother the entire flight would go. But today's flight would pose no problems. Tony would pilot the second aircraft in our flight, and we had flown together for so long that we could almost read each other's thoughts. I would command the flight, but not fly the lead aircraft. Our visual aircraft were all dual controlled aircraft, so I could take over in case of any injury to the pilot. From actual combat experience, we had found that the flight leader of the reconnaissance missions had enough to keep him busy without also having to worry about flying his aircraft.

With our briefing complete, we busied ourselves with the well-oiled routine of the pre-mission activities: aircraft preflight, strap-in and cockpit checks, engine start and taxi, arming and runup, short interval takeoff, formation joinup and cruise to the target area. The precision with which these activities were performed only heightened my sense of expectancy. Glancing backward at the second Mohawk tucked neatly into formation with us, I could not help but feel a deep sense of pride with both the

The Tchepone Navy

FIGURE 2: Camouflaged ferry pushed sideways into an inlet at the edge of the river.

OV-1 aircraft and these rough and rowdy fliers who daily flew the big birds into one of the most hazardous areas of the war. In fact, it was becoming a sign of suspicion within our unit if one of the visual flights came back home without at least one bullet hole in each plane!

To a pilot, a cockpit is his world. And with the drone of the engines humming in my ears and the familiar weight of my survival gear gluing me to my seat, my thoughts turned inward. My mind began to wander to friends lost in this crazy "conflict," empty bunks no longer used and painfully written letters of condolence.

But suddenly, the loud roar of .50-caliber machineguns being tested before our letdown into the target area woke me out of my reverie. All my concentration was now on the job as we took up combat spacing and coasted downhill toward our usual observation altitude. The first portion of our reconnaissance proved routine. But then, just before we were to make our approach into the Tchepone area, my pilot spotted something from his side of the aircraft.

"It looked like a sort of trellis made out of bamboo," he said, as we swung around for another look. I hadn't seen anything, and we weren't able to spot anything on our second run, so I marked the area on my map and motioned for us to continue on toward Tchepone.

At the mouth of the slender valley leading into the Tchepone area, I told the flight to drop to treetop level to give us better AA protection and to add speed for our pass down the river. Then, just as we passed the bend in the river, I spotted it. We were right down at water level under the treetops doing about 250 knots indicated when it flashed by so fast I wasn't sure of what I had seen, so I let my pilot continue on up the river a short way.

"Let's get out of here and head south," broke in Tony in our cover ship.

"No, I want to make one more pass down the river," I commanded. "I think I spotted the ferry and I want to make a positive ID (identification)."

We swung around while I briefed my pilot on the location where I thought I had seen the ferry. This time we would fly so that the ferry would be positioned out the pilot's side of the aircraft to let him also identify the ferry. As we went by, there in a small inlet on the north side of the river was our ferry!

"That's it, gang!" exclaimed my pilot, "we've finally found that baby!" But the ferry was so well camouflaged that Tony still had not been able to see it. "Let's make one more pass," he proposed, "and if it's there, I'll find it this time." I hadn't observed any ground fire yet, so I agreed. This time we pulled up high for cover while Tony made his third low-level pass down the river.

From the sound of Tony's voice, he didn't seem to have much confidence in our findings, but we had both seen it clearly:

The ferry was about 30 feet long and was pushed sideways into an inlet at the edge of the river. The most clearly visible portion of the ferry was one if its cylindrical pontoons, which ran the entire length of the ferry and stuck out of the water almost 3 feet (figure 2). The remainder of the ferry was completely camouflaged and out of view. We would never have found it if we hadn't been right down on the deck.

As Tony flew by the ferry we told him exactly where to look and when he saw it he couldn't believe his eyes!

"Boys, you're right!" he shouted. "Man, have we ever found that baby!" I'll never forget the excitement that was now in his voice. But now we had a new problem: what to do about the ferry? We had limited ordnance on board, and it was strictly for defensive use. Our rules of engagement would not allow us to fire unless we were first fired upon. Since we could not shoot at the ferry, if we followed the usual procedure of reporting the ferry's position after we had landed, there would be little hope of the Air Force ever finding the ferry because of all the camouflage. So what were we to do?

Just then, Tony spotted an Air Force forward air controller (FAC) aircraft slowly plodding along just to the east of us. As the primary spotter in the area, the FAC had full authority to direct fighter bomber aircraft onto any targets of opportunity. So on guard frequency, I asked the FAC aircraft to come up into our operating frequency.

"SPUD Lead, this is SPOTTER 5, what's up?" asked the FAC.

"We've found a ferry for you, and want you to take it out," I replied. The FAC was more than willing to oblige, but after trying to find it from his safe altitude with no results, he finally asked: "Well, how would you boys like to help out and spot that old target for me?"

Those were just the words we had hoped to hear, so with the vengeance of frustrated fighter pilots, we quickly rolled in and popped all 14 of our rockets dead on the target.

"Good shooting!" came the word from the FAC. "You knocked all the camouflage away and now I can get a good look at it. And, by the way, you also put some pretty good holes in it; however, just to be safe, I'll get some heavy stuff in on it in a jiff." I couldn't help but smile at my pilot.

"By the way, guys, just how in the world did you find that ferry in the first place?" asked the FAC, "I couldn't even see it after you told me where to look!"

"Just doing our usual terrific job," I replied with obvious pride, "nothing out of the ordinary!"

With The Tchepone Navy under water, we made an uneventful return home, but in the debrief we caused quite a stir. The whole incident caught the imagination of the entire unit, and the flight became known locally as the "sinking of The Tchepone Navy." Tactically, we had put a real crimp in Charlie's party and, that night, the Air Force had a field day shooting at a load of Vietcong trucks lined up at the ferry site waiting for the now defunct ferry.

We later made a positive ID on the bamboo latticework, which we first spotted on this flight. That turned out to be a major camouflaged truck park and storage area resulting in numerous large secondary fires when the Air Force bombed it. Once again the OV-1 had proven its worth in practice!

Partial list of Vietnam War articles published in the *Aviation Digest*

1. Sabiston, Thomas J., LTC, "Army Aviation Operation in Vietnam," January 1963.
2. Cherne, Milton P., MAJ, "Your Orders," November 1963.
3. "Vietcong Roundup," April 1964.
4. "10,000 Hours in Vietnam," July 1964.
5. Bishop, Donald H. Jr., CWO, "Vietnam Orientation," January 1965.
6. "UH-1Ds Arrive in Vietnam," July 1965.
7. Mauldin, Bruce P., WO, "Doubleheader Airmobile Operations in Vietnam," August 1965.
8. Busse, Richard, PFC, "Vietnam Dragonfly," October 1965.
9. "Pilot's Scrapbook," November 1965.
10. "Army Aviation in Vietnam," January 1966.
11. Cowan, Sidney C., CW3, "Ride A Slick Ship," June 1966.
12. "Minipads in Vietnam," February 1967.
13. Donica, Richard D., LT, "A Vietnam Affair," April 1967.
14. "Cayuse in Vietnam," May 1967.
15. Campbell, Raymond P. Jr., COL, "Helicopter Gunnery Training in Vietnam," May 1967.
16. Smith, William H., "U-21 to Vietnam," October 1967.
17. Yates, Walter H., CPT, "Bird Dogging in Vietnam," January 1968.
18. Brown, John L. CPT., "A Duty Day in Vietnam," March 1968.
19. Roberts, Donald A., MAJ, "Aboard the Mohawk in Vietnam," October 1968.
20. Knight, Emmett F., LTC, "Aircraft Recovery in Vietnam," March 1969.
21. Mullen, Gordon R., LTC, "Inadvertent IFR in Vietnam," March 1969.
22. Beaver, Richard C., CW2, "Instrument Flying in Vietnam," December 1969.
23. Rutherford, Billy E., LTC, "Assignment Vietnam," April 1970.
24. McKenzie, James B., CPT, "They're Here," February 1971.
25. Johnson, William W., "Unique Aviation Safety Inspection Team Travels Vietnam," February 1972.
26. "Last Vietnamese Graduates," February 1975.
27. Fulbrook, Jim E., CPT "LAMSON 719, Part 1: Prelude to Air Assault" June 1986.
28. Fulbrook, Jim E., CPT, "LAMSON 719, Part II: The Battle," July 1986.
29. Fulbrook, Jim E., CPT, "LAMSON 719, Part III: Reflections and Values," August 1986.

MAINTAINING CONTROL
A HISTORIC VIEW

Captain Robert P. Samborski
Commander
256th Signal Support Company
Fort Rucker, AL

MAJOR ARMY COMMANDERS are paying more attention to Army airspace command and control (A^2C^2). With the current changes in doctrine and personnel under the Army of Excellence, they are also paying more attention to supporting the A^2C^2. The 256th Signal Support Company (SSC) is changing to support the tactical air traffic control (ATC) units to perform their A^2C^2 mission. The company has instituted new support procedures to accomplish its mission.

The 256th SSC is the only unit of its kind in the U.S. Army. The company's mission is to provide onsite and offsite (organizational through limited depot) maintenance and supply support of tactical ATC equipment and systems. The unit supports tactical ATC units in the continental United States (CONUS) and outside CONUS. The 256th SSC is part of the Army element of the Rapid Deployment Joint Task Force, which supports the Third U.S. Army. The unit is currently at Ft. Rucker, AL, but has not always been.

History

The company was constituted originally on 12 April 1944 as the 3256th SSC. It was activated on 25 April 1944 in England. The unit deployed to mainland Europe, and was assigned to the European theater of operations. The 3256th took part in four major campaigns in World War (WW) II: Northern France, from July to September 1944; the Rhineland, from September 1944 to March 1945; Ardennes-Alsac, from December 1944 to January 1945; and Central Europe, from March to May 1945. The company was inactivated on 28 January 1946 at Camp Kilmer, NJ.

With the Korean conflict came the need for more signal companies in the Active Army. The 3256th was redesignated as the 256th SSC (Installation) and activated at Camp Gordon, GA, on 25 March 1953. It was allotted to the Regular Army and assigned to the Third Army. The company was attached to the 366th Signal Battalion for support purposes. The unit was comprised of 5 officers and 67 enlisted personnel. The 256th SSC did not take part in the Korean conflict and was inactivated on 1 November 1955.

The 256th SSC was activated again on 1 May 1960 at Verdum, France. The unit strength was 254 personnel—5 officers, 3 warrant officers and 246 enlisted men. On 1 November 1963 the company was reorganized, and the unit strength was adjusted. The authorized strength became 8 officers, 3 warrant officers and 435 enlisted men. The 256th SSC's expanding role in providing maintenance support in Europe caused another

reorganization of the modified table of organization and equipment (MTOE). The unit authorized strength became 10 officers, 3 warrant officers and 471 enlisted personnel. The company's mission was to provide limited signal service to units in Europe.

The unit's participation in the Vietnam conflict is uncertain because of another unit, the 256th Signal Support Detachment (SSD), which was on the Army's active role with the same mission during the same period of time. The 256th SSD had much of the same past as the 256th SSC. Both were activated in WW II, and both fought in WW II. The 256th SSD, however, did fight and win awards in Vietnam.

Because two units had similar missions on Active Duty at the same time, some of the unit histories are confused. The 256th SSC was deactivated on 1 July 1967 in Germany. The 256th SSD was also deactivated during the Vietnam conflict and has not been reactivated. The 256th SSC began reforming in Vietnam in January 1970. On 1 March 1970, the company was activated and assigned to the U.S. Army Strategic Communications Command as a level one unit. These orders were rescinded 1 month later.

Current

The 256th SSC was organized at Ft. Rucker, AL, under a carrier table of distribution and allowances (TDA) on 16 February 1979. In October 1979, the unit's MTOE was activated under the operational control of the U.S. Army Communications Command (USACC), Ft. Rucker. USACC forces took over operational control of the company on 17 December 1980. Formal command and control transferred again on 16 July 1982 to the U.S. Army Air Traffic Control Combat Support Activity, a subelement of the 7th Signal Command.

The 256th SSC is still part of the Signal Branch; however, formal operational control lies with the U.S. Army Forces Command (FORSCOM). The company works for the J3 ATC officer at FORSCOM headquarters. The transfer of all ATC personnel from the Signal Branch to the Aviation Branch will probably cause the 256th SSC to have a name change in the near future.

Future

The 256th SSC needs is changing to an aviation support company to align itself correctly with the units it supports. The mission of the company will remain the same. The company works for and supports ATC units in the Active Army and the Reserve. Changing from the Signal Branch to the Aviation Branch is a logical transition because of the close tie that the unit has with the ATC community.

Mission Support

The company supports three corps, 11 divisions and 2 separate brigades at 12 installations in CONUS and Alaska. Under the National Guard (NG) affiliation program, support is provided to NG units in 17 states. Thirty-one personnel are in the company, 5 TDA civilian employees and 26 MTOE military personnel are available to provide this support. The company provides maintenance and supply support, which is different from normal supply maintenance companies. The unit's mission has many inherent responsibilities. These include operating a repairable exchange maintenance branch and a specialized repair activity. The company personnel repair, stock and distribute ATC navigational aids, peculiar modules and subassemblies. They maintain more than 700 lines of bench stock, 1,100 authorized stockage list (ASL) lines and 220 lines of shop stock. Technical assistance by soldiers from the 256th SSG is an integral part of the company's mission. Units needing assistance from the 256th can come to Ft. Rucker or send a request for onsite support to the unit. The company will send teams to provide training, especially for units fielding new equipment.

The company has changed its support posture to keep up with the changing A^2C^2 doctrine. Personnel in the company have been identified, and specialized repair kits have been assembled, to support deployed ATC units. These teams can deploy to where the unit being supported is located. A designated slice of the ASL also goes, depending on the unit equipment densities.

The Army is an ever-changing organization. The 256th SSC truly has made the necessary changes to keep up with the worldwide mission.

Note: Special thanks to Mr. John Wilson, chief, Organizational History Branch, Cameron Station, Alexandria, VA; Mrs. Kathy Coker, Ph.D., Historian, Ft. Gordon, GA; and Mr. Dennis Vetock, Historical Reference Branch, Carlisle Barracks, PA, for their support in providing information used in this article. Request that anyone having further information on the 256th SSC or 256th SSD send it to Commander, 256th Signal Support Company, Ft. Rucker, AL 36362-5318.

1988 ALSE Messages

Following are messages from last year. The information may still apply to you.

Relocation of Components

ALSE message 88-1, 081630Z JAN 88 outlines the relocation of components for the SRU-21/P survival vest and standard individual survival kits.

The multipurpose net, NSN 8465-00-300-2138, has been removed from the vest and transferred to the standard individual survival kits: NSN 1680-00-973-1863 for overwater; 1680-00-973-1862 for cold climate; and 1680-00-973-1861 for hot climate.

The multipurpose net is not considered short-term survival equipment. Therefore, in an effort to reduce the bulk of the survival vest, it was determined the individual kit is a more appropriate place for this item.

Additionally, since the adoption of the new survival matches, NSN 9920-01-154-7199, matchbox 8465-00-265-4925 is no longer required.

These changes may be scheduled for the next inspection. POC is Mr. Boone Hopkins, AMCPM-ALSE-L, AUTOVON 693-3573 or Commercial 314-263-3215.

Carbon Dioxide (CO_2) Cartridge

ALSE message 88-2, 251330Z FEB 88 indicated the Defense Construction Supply Center was experiencing a critical shortage of CO_2 cylinders. These cylinders are carbon dioxide cartridges, NSN 4220-00-543-6693 for LPU-2P-3P and -10P. The item manager said the delivery from one contractor had again slipped, causing a further delay in shipment.

A shipment of 8,389 cylinders was received in December 1987 and was released to fill priority 02 backorders. Because of the remaining thousands of back orders, ALSE was concerned about the shortage of cylinders. Since 8,389 cylinders were not enough to satisfy back orders, waiver was again granted to defer the 5 percent functional test requirement.

The POC for this message is Mr. Boone Hopkins, AMCPM-ALSE-L, AUTOVON 693-3573 or Commercial 314-263-3573.

Extension of Potency Expiration Date

ALSE message 88-3 011030Z APR 88 stated the results of a Food and Drug Administration testing revealed the following medical material is suitable for issue and use if the unit had a good wax closure and showed no signs of physical deterioration. NSN 6850-00-985-7166, Water Purification Tablet, Iodine, 8 milligrams, Van Brode Milling or Van Ben, contract number DLA 120-83-C 4135. All lots manufactured during 1983.

Activities will line through the old expiration date and remark material with "retest December 1989"; cite DPSC project number M88035006 as authority.

Before applying the new expiration date, material should be visually examined to ensure serviceability of stocks on hand. Material that does not pass all inspection criteria should be destroyed as unsuitable for issue and use.

The medical material is a component of the following (and may be a component of other) minor assemblages:

6545-00-927-3000 MISS Aeronautic, Emergency
6545-00-927-4925 SISS AAD Flight Nurse
6545-00-823-8165 First Aid Kit, Individual
6545-00-116-1410 First Aid Kit, General Purpose
6545-00-139-3671 Survival Kit, Individual
6545-00-094-8412 First Aid Kit, Individual
6545-01-120-2632 Survival Kit, Tropical

POC is Mr. Boone Hopkins, AMCPM-ALSE-L, AUTOVON 693-3573 or Commercial 314-263-3573.

Distress Signal Kits

ALSE message 88-4 131500Z JUL 88 mentioned the Armament, Munitions and Chemical Command was experiencing a shortage of signal kits, distress, foliage penetrate (L119), NSN 1370-00-490 7362. The signal kit is used in the SRU-21/P survival vest. The inventory manager said action was initiated to expedite procurement of the signal kit; however, delivery was not expected until the second quarter of fiscal year 1989.

In view of the above, this message supplemented ALSE MSG 87-4, 161700Z JAN 87, and granted

a waiver to substitute, using signal kit (L116) type 185, NSN 1370-00-319-7560. Substitution was authorized until the subject signal kit becomes available, not to exceed 30 June 1989.

The POC is Mr. Jim Angelos, AMCPM-ALSE, AUTOVON 693-3573, Commercial 314-263-3573.

SPH-4 Helmet

ALSE message 88-5 261130Z JUL 88 discussed the thermoplastic liner (TPL) conversion kit for SPH-4 flyer's helmet. NSNs have been assigned to the TPL 9TP conversion kit for the SPH-4 flyer's helmet.

Individuals can use the TPL conversion kit to replace the suspension assembly of the SPH-4 helmet with the TPL.

The TPL conversion kit is a local purchase item. The estimated price is $60.

In the continental United States customers can order the TPL kit by phoning Commercial 717-282-3550 or writing Gentex Corporation, P.O. Box 315, Carbondale, PA 18407.

Overseas customers should requisition through UPSC (S9T), using the assigned NSNs. Support will be provided by DPSC's special purchase team.

POC at DPSC Philadelphia, PA, is Mark Pecorini, STRAP-LM, AUTOVON 444-2583. The POC for this message is Mr. James Angelos, ANCPM-ALSE, AUTOVON 693-3573 or Commercial 314-263-3575.

Survival Training

Army Regulation (AR) 95-3, *General Provisions, Training, Standardization, and Resource Management,* paragraph 7-1, lays out the responsibilities and requirements for aviation life support equipment (ALSE) and survival training.

To help commanders at all levels with survival training requirements of AR 95-3, the U.S. Army Aviation Center, Ft. Rucker, AL, has produced four well-written correspondence courses for every aircrewmember. They are AV 0661 Part I, Survival Elements, Psychological Aspects and Survival Medicine; AV 0662 Part II, Protection From the Environment; AV 0663 Part III, Sustenance; and AV 0664 Part IV, Direction Finding, Signaling and Recovery. Part I is a prerequisite for all other parts. Students can enroll in Parts II through IV in any sequence.

To obtain these courses, individuals must fill out a DA Form 145, Army Correspondence Course Enrollment Application, and list AV 0661, AV 0662, AV 0663 and AV 0664 in block 4.

These subcourses do two things: First, they give you one retirement point for every three credit hours; second, they give you survival knowledge that everyone needs, whether you fly or not. Should you end up in a survival situation, you will be prepared.

The ALSE program manager recommends that all aircrews, ALSE personnel and frequent flying passengers enroll in these correspondence courses.

Correspondence

Dear PEARL'S:

I am stationed with Multinational Force and Observers, Force Headquarters, Sinai. I serve with the logistical support unit as a crewchief on the UH-1H Huey. I have been working in ALSE for 4 years. My training in ALSE was at Ft. Eustis, VA. I am the ALSE noncommissioned officer in charge of the aviation company.

I need help with a few situations in our ALSE shop.

- What manuals tell how to replace medical items in first aid kits and identify the shelf life of these items?
- We are in a remote area and distribution is slow. Have you dispatched any new messages? Can I get copies?
- I have 16 overwater survival kits, but they are unserviceable because they are without food packets. I have had my requisitions cancelled three times. I reordered with a priority 5, but have not received them.

I would appreciate hearing from you, and if you can help, please do so. We all think you are the greatest. Please continue the information.

SGT Mario S. Pagan
Avn Co/LSU
APO New York

Dear SGT Pagan:

Yes, food packets are in supply, no shortages. We are sending ALSE messages under separate cover.

PEARL'S

If you have a question about personal equipment or rescue/survival gear, write PEARL'S AMC Product Management Office, ATTN: AMCPM-ALSE, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798 or call AUTOVON 693-3573 or Commercial 314-263-3573.

AVIATION PERSONNEL NOTES

Battalion Command Selection Board Observations

Observations of the Aviation Branch representative who served on the 1989 Combat Support Arms Battalion Command Selection Board from 7 to 17 February 1989 are instructive. The following comments are based on those observations:

Area of concentration 15C35 is healthy. This was shown by the numerous aerial exploitation battalion commanders selected and the selection of Army Aviation officers for Military Intelligence battalion ground commands. The Aviation Branch received a fair share of the available commands.

The foreign area officer (FAO) was also of particular interest. Members of the board were briefed that to be a "real FAO," an officer should have had the necessary language training and then at least two assignments in this functional area. In many cases, officers have FAO designations based on an assignment at the Pentagon or at a service academy. Simply stated, they are not competitive.

The importance of the senior rater portion of officer efficiency reports was again highlighted. The Aviation Branch still has senior raters with top block center of mass and a recurring inequality between the written word and the senior rater profile; for instance, the statement "one of my best officers, promote ahead of contemporaries," and then a check in the bottom block of the profile.

Another area of concern was the overabundance of unnecessary items in the C and D sections of the fiche. A few letters of commendation from senior personnel have more weight than all the "atta-boys" ever received. Some officers had an entire microfiche of nothing but subcourse completions.

One last recurring observation regards the value of photos. Photos give board members the first impression and each board member only has each record for a few minutes. Many officers were incorrectly photographed while wearing General Staff brass; others had reversed their U.S. and branch insignia. Aviation Branch members had 3.7 percent of their photos missing and 11 percent were outdated.

Scholarship Program

Each year, the George and Carol Olmstead Foundation awards scholarships to three outstanding Army officers—two U.S. Military Academy graduates and one officer commissioned from other sources such as OCS and ROTC. The selection process begins each August with final applications due by January of each year.

Olmsted scholars spend 9 to 12 months at the Defense Language Institute, Monterey, CA. Then they go abroad for 2 years to study in the fields

of political science or international relations. After overseas study, the students earn a master's degree after 1 year at a university in the United States.

To be eligible for one of these scholarships, an officer must:

- Be Regular Army.
- Be branch qualified.
- Have between 3 and 8 years of commissioned service.
- Have a minimum GRE score of 1,200, or have an undergraduate grade average of B plus or higher.
- Be in compliance with AR 600-9, *The Army Weight Control Program.*

An Army selection board chooses seven finalists from which an Olmsted Foundation committee chooses the three recipients. The first step for officers desiring to be nominated is to contact their career managers and obtain branch approval to compete. Further information is available from Ms. Hudson, AUTOVON 221-3140 or Commercial 202-325-3140.

Instructor and Tactical Officer Duty at West Point

The United States Military Academy (USMA) annually seeks about 200 academically qualified officers to teach a wide range of academic subjects. They serve as company tactical officers, physical education teachers or military instructors for the corps of cadets. Opportunities to serve on the dean's staff also are available. Qualified officers find teaching positions among the following academic disciplines: behavioral sciences and leadership, chemistry, civil engineering, computer science, foreign languages, geography and electrical engineering. Other disciplines are English, mathematics, mechanical engineering, physics, history, law and social sciences.

Some teaching positions are open for field grade officers possessing advanced degrees. However, the majority of these positions are filled by captains who obtain a master's degree en route. Candidates should be outstanding soldiers. They should excel intellectually as shown by records such as Graduate Record Examination (GRE) scores and undergraduate transcripts. Company grade officers should plan their careers to make sure they are branch qualified by completing the following: the advanced course, Combined Arms and Services Staff School, and a company-level command or equivalent assignment. They must have the necessary credentials to pursue a master's degree at a quality graduate school before serving at USMA. Company tactical officers are leaders, supervisors and counselors to about 110 cadets in each of the 36 cadet companies.

The academy seeks a faculty mix of USMA graduates and graduates of other colleges. Women and minority officers from Officers' Candidate School (OCS) and Reserve Officers' Training Corps (ROTC) have served as superior role models at West Point.

For outstanding officers, assignment to the USMA offers excellent opportunities to achieve a master's degree in one of many disciplines; teaching in a most challenging environment; and joining a distinguished group of Army leaders. The West Point faculty has not only molded leaders of tomorrow, but has also made significant contributions to the Army and the nation in subsequent assignments.

Former instructors regard their interaction with cadets as one of the most rewarding phases of their careers. These officers consistently have exceeded Armywide selection rates for promotions and schooling.

Interested officers should write: Superintendent, United States Military Academy, ATTN: MAAG-PM, West Point, NY 10996-5000, or call AUTOVON 688-3500/3402.

Wearing Awards on Shirts

The Chief of Staff, Army, has approved a policy change that allows soldiers the option of wearing awards and decorations on green uniform shirts. He granted the change after the Army Natick Research, Development and Engineering Center, Natick, MA, found that wearing awards would not damage the shirts. A change to AR 670-1, *Wear and Appearance of Army Uniforms and Insignia,* describes the new policy.

The User's Representative For Operator's Manuals Changes

Mr. Stephen M. Harris
Directorate of Evaluation and Standardization
U.S. Army Aviation Center
Fort Rucker, AL

THE U.S. ARMY Aviation Systems Command (USAAVSCOM), St. Louis, MO, is solely responsible for airworthiness of aircraft and content of the operator's manuals and checklists, as well as the overall preparation, management and submission for printing of the manuals and checklists. The guidance is Army Regulation (AR) 25-30, *The Army Integrated Publishing and Printing Program.*

AR 25-30 outlines that the commander, U.S. Army Training and Doctrine Command (TRADOC), is the principal user representative to help develop, review and revise the operator's manual publications. TRADOC designated the U.S. Army Aviation Center, Ft. Rucker, AL, to ensure that personnel possess the skills and knowledge required to participate in this development and review process. The commander, United States Army Aviation Center, delegated this responsibility to the Directorate of Evaluation and Standardization (DES) under the joint operating agreement (JOA) between Aviation Systems Command and the Aviation Center, this past December.

The JOA outlines each commander's responsibilities for preparing and coordinating Army aircraft operator's manuals (dash 10s) and checklists. The following explains the responsibilities of each command outlined in the JOA.

General responsibilities:

USAAVSCOM is solely responsible for airworthiness of aircraft and content of the operator's manuals and checklists. It will be the only authorized contact with contractors on terms and conditions, costs, content, format or schedules of contracts for operator's manuals and checklists.

USAAVSCOM will only produce safety-of-flight (SOF) changes or changes related to engineering change proposals for the following aircraft systems: UH-1 Huey, CH-54 Tarhe, OV-1 Mohawk,

U-8 Seminole, U-21 Ute, OH-6 Cayuse, OH-58A/C Kiowa, CH-47A/B/C Chinook and AH-1 Cobra series. This means that routine changes to these manuals have virtually stopped.

Detailed responsibilities:

USAAVSCOM will—

- Provide the Aviation Center with a schedule of operators' manuals and checklists' changes or revisions for the different aircraft systems. The Aviation Center will update this list as necessary, but no less than once a year. This allows the Aviation Center to plan for and conduct user review conferences to collect information from the users and submit changes to USAAVSCOM.
- Forward to the Aviation Center Department of the Army (DA) Forms 2028, Recommended Changes to Publications and Blank Forms, correspondence or suggestions affecting chapters 8 and 9 of the operator's manuals, and checklists for review and user comment. Provide information copies of other completed DA Forms 2028 and five review copies of new manuals and changes/or revisions to existing manuals before review/verification conferences.
- Chair all USAAVSCOM review/verification conferences, prepare conference minutes, coordinate with attendees and provide a copy of these minutes to all attendees. The Aviation Center attends these conferences to represent users' comments.
- Provide contractual acceptance and be solely responsible for all contractor data. Make sure to correct any information, as a result of review conferences, in the final drafts and reproducibles. This allows the Aviation Center a final review before printing the change.
- Notify the Aviation Center about a warranted change or revision to Military Specification MIL-M-63029(AV). This document gives information about the manual's format and appearance.
- Coordinate with the Aviation Center to develop SOF changes to operator's manuals and checklists. This allows the Aviation Center to present the user's opinion about recommended SOF proposed changes.

The Aviation Center will—

- Review and comment on DA Forms 2028, suggestions, correspondence and other pertinent data furnished by USAAVSCOM.
- Host and chair user review conferences for operator's manuals and checklists as necessary to develop user-recommended changes. Forward changes to USAAVSCOM to review, comment or incorporate.
- Review and coordinate draft copies of operator's manuals and checklists from USAAVSCOM. Forward comments and recommendations to USAAVSCOM by cutoff dates.
- Help prepare changes or revisions to MIL-M-63029(AV).
- Participate and provide user coordination according to AR 25-30 in USAAVSCOM review and verification conferences. Notify USAAVSCOM of intent to attend review and verification conferences.
- Review and coordinate SOF messages by phone or datafax within specified suspenses.

Why is this information important to you, the user of the aircraft operator's manuals? It gives you the overall picture of who is responsible for the manuals and who has been designated by regulation or agreement to represent you, the user, in providing the best input for proposed changes to your manual. It gives you a better understanding of the overall preparation, coordination and approval of changes to the operator's manuals.

The Literature Review Branch carries out the above responsibilities in DES. To better serve you, the branch has begun sending a representative to the field during the fiscal year 1989 Branch Liaison Team/Aviation Standardization and Training Seminars. Be sure representatives from your unit make recommendations to these DES personnel that may assist us to better represent you, the user. Your recommendations are an important part of developing and revising the manuals.

DES welcomes your inquiries and requests to focus attention on an area of major importance. Write to us at: Commander, U.S. Army Aviation Center, ATTN: ATZQ-ES, Fort Rucker, AL 36362-5208; or call us at AUTOVON 558-3504 or Commercial 205-255-3504. After duty hours call Fort Rucker Hotline, AUTOVON 558-6487 or Commercial 205-255-6487 and leave a message.

National Airspace Systems Plan

An Ambitious Future for ATC

Mr. John D. Peebles
Chief, ATC Systems Integration Division
U.S. Army Air Traffic Control Activity
Fort Rucker, AL

THE NATIONAL Airspace Systems Plan (NASP) for facilities, equipment, associated development and other capital needs has information on necessary projects to modernize and improve air traffic control (ATC) and airways facilities. This information is valid through the year 2000 and beyond for the Federal Aviation Administration (FAA) and Department of Defense (DOD).

The first edition of the NASP, published by the FAA in December 1981, contained 81 NAS projects. DOD completed an analysis of the NASP in April 1985. The 1988 edition of the NASP now has more than 100 NAS projects. The 1989 edition, due this month, will include a chapter for the first time on DOD requirements.

The DOD operates 56 approach control facilities, 180 control towers, owns more than 230 military airfields and generates a traffic count that exceeds 25 million operations per year.

The DOD must fully participate in the NAS. Besides airfields, DOD must provide for an orderly transition from the terminal and en route environment into and out of the special use airspace environment.

DOD must effectively and safely operate and control military aircraft in a manner that does not interfere with the automated capabilities that come with new NAS equipment. This means that DOD and FAA should procure identical ATC systems to the maximum extent possible. NAS modernization will provide an interoperability and commonality of ATC equipment never achieved in ATC history.

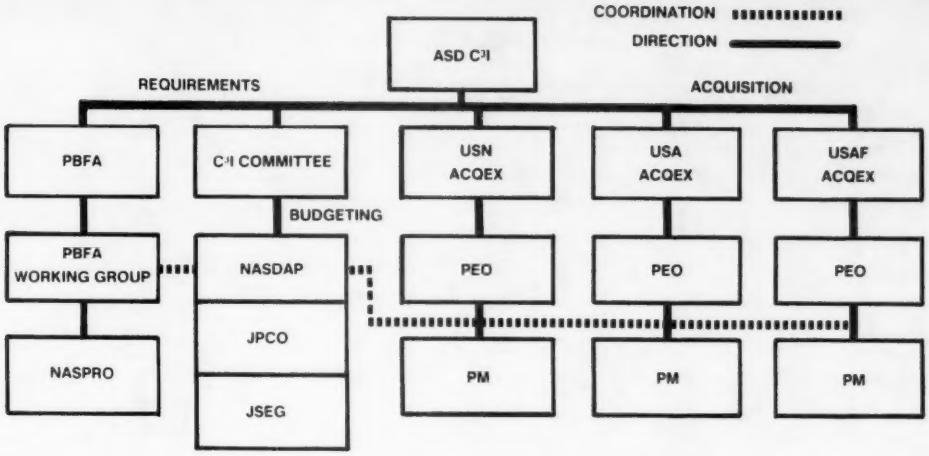
The FAA and DOD roles in the NASP are congressionally mandated and must be budgeted, programed and implemented together. Various offices, committees and groups throughout the Army help DOD's participation in the NASP.

The following shows examples of DOD's involvement in the NASP:

ASD C³I (Assistant Secretary of Defense, Command, Control, Communications and Intelligence) is designated by DOD Directive 5030.19. This individual monitors the DOD interface with the FAA, including NAS matters. The C³I Systems Committee was established under the control of the Defense Acquisition Board and tasked as the overall manager for NAS acquisition activity. This committee established an Airspace Control Planning Panel. This panel promotes interservice, long-range planning for ATC and airspace management systems. The planning relates to other C³I systems under the C³I Systems Committee. The panel serves as the forum to communicate and integrate advanced concepts and technologies that relate to ATC and airspace management systems.

DOD PBFA (Policy Board on Federal Aviation) is mandated to develop and maintain a consolidated and coordinated DOD airspace plan that defines, validates and supports future airspace requirements. These requirements include development and implementation of the Military Airspace Management System. The PBFA chairman has appointed an executive director. The executive director serves as the primary liaison with the FAA on federal aviation matters involving more than one service.

PBWG (Policy Board Working Group) is chaired by the executive director of the PBFA. It was established to initiate, staff and coordinate federal



NATIONAL AIRSPACE SYSTEMS DEFENSE ACQUISITION PANEL (NASDAP)
COMMAND RELATIONSHIP

aviation and NAS matters. The PBWG directly supports the PBFA.

DOD NASPRO (National Airspace Systems Plan Requirements Office) is a multiservice group located at the FAA headquarters, Washington, DC. The NASPRO provides the day-to-day interface and coordination with the FAA on NASP matters, including requirements formulation. The NASPRO reports directly to the PBWG.

NASDAP (National Airspace Systems Defense Acquisition Panel) is a multiservice panel that consolidates selected ATC procurement within DOD. The NASDAP decides what ATC equipment to jointly procure for the services.

JPCO (Joint Program Coordinating Office), a multiservice office, coordinates the funding and acquisition of those components of the FAA NASP that affects the DOD fixed-base ATC. The JPCO directly supports the NASDAP.

JSEG (Joint Systems Engineering Group), another multiservice group established at the direction of the NASDAP, is the DOD engineering interface with FAA working groups on NASP systems. It conducts systems engineering and integration of DOD fixedbase ATC and landing systems. The JSEG supports and reports directly to the JPCO.

The director, U.S. Army ATC Activity, has established a NASP working group consisting of members from all divisions in the activity. This working group is supervised by the ATC Development Office, ATC Systems Integration Division.

Readers are encouraged to address matters concerning air traffic control to Commander, USAAVNC, ATTN: ATZQ-ATC-MO, Fort Rucker, AL 36362-5265.

U.S. Army Class A Aviation Flight Mishaps

	Number	Flying Hours	Rate	Army Fatalities	Total Cost (in millions)
FY 88 (through 31 May)	21	1,129,890	1.86	34	49.8
FY 89 (through 31 May)	20	1,063,965*	1.88	3	44.2

*estimated

The French Army Aviator

PART 3

French Captains

Precommand Training, the Advanced Course with Élan

Lieutenant Colonel Terry L. Johnson

The last two articles on French Aviation dealt with the noncommissioned officer aviator and the lieutenant aviator (see April 1989 and May 1989 Aviation Digest). Where they are the backbone of the combat helicopter regiments and light helicopter groups, the captain, specifically the company commander, is the heart and brains. This article describes the preparation of the captain for his or her period of command. All aviation captains must attend the Cours de Perfectionnement des Officers Subalternes, or CPOS, the Captains Course, before assuming command of an aviation company or troop. French Army Aviation officers believe this course offers some of the best instruction they receive in their entire careers. One almost has to attend the course to gain a true appreciation of its effectiveness. The author has, and describes the program in this article.

MY ASSIGNMENT to France began in January 1987 when I replaced the first-ever Ft. Rucker, AL, liaison officer to French Army Aviation, Lieutenant Colonel Tom Rains. Tom had me programed to attend something he called the "Captain's Course." I was a little leery, as a frocked lieutenant colonel, about returning to an advanced course. It was not that I was too senior for that level. Given my rustiness in French and the 5 years I'd been out of aviation, I would have been more comfortable attending the lieutenant's course. Soon, however, the Rains were on their way to Ft. Hood, TX, and I was faced with the regular workload of a liaison officer, getting oriented and becoming a student again.

The first thing I had to do was to get qualified in the SA 341 Gazelle, for CPOS is a *flying* course. This brought me to my first encounter with the French sergeant-pilot. I was assigned an adjutant (E7) instructor pilot from the lieutenant's course, Jean-Jacques Jacquot. We were to develop a friendly professional relationship in the next several weeks. Jacquot is one of the few noncommissioned officers (NCOs) qualified as a team commander (see NCO article), and he has more than 3,500 flight hours.

Since I had to make several trips and host visits by some U.S. Army, Europe personnel in January, my transition was anything but continuous. After my initial shock at the lack of checklists and at flying in battle dress uniform, I became comfortable in the machine. Jacquot followed no particular program other than to verify my experience as a pilot and my familiarity with the Gazelle. I found flying the Gazelle, despite the clockwise rotation of the rotor, to be not unlike flying the OH-58 Kiowa. We spent several hours on tactics with Jacquot showing me what they teach and me demonstrating our procedures. As he did not speak English, it was a great exercise for me in refreshing my French. I accumulated 7 hours including 1 night flight and numerous touchdown autorotations in my transition. There was no checkride as such. I received my diploma and French Army Aviator wings from the school commandant with a champagne toast before lunch. The French do things with style!

The Captain's Course started in mid-February. I had 14 classmates including the one woman captain in Army Aviation at that time. Two of the students were nonflying aviation maintenance officers. Four were SA 330 Puma pilots, and the rest were mostly Gazelle scout or attack helicopter pilots. All had or were just short of 1,000 hours flight time.

At first they were a little intimidated by me, but as the course progressed they relaxed. I didn't. The course was demanding and required a base of experience that I obviously lacked, being new to France and their army. When I asked for the field manuals, technical manuals and standing operating procedures, the course instructors carefully explained that there were none! So much for the refuge of reading. In fairness, there are excellent operator's manuals for the aircraft, and a body of "regulations" governing tactical operations. They are not,

however, used extensively in the school, and regimental commanders have the latitude to develop their own procedures. Standardization among regiments is a problem.

By now I was beginning to doubt the professional competence of French Army Aviation in general. I'd had a transition without any ground school, no written tests, no checkrides, no flight suits and now *no manuals*! It was time to reserve judgment and plunge into the course.

Considering my other duties, I was excused from company administrative classes, and I missed a number of others because of trips and visits, but I did participate in most of the tactical instruction and exercises. The program of instruction is divided into six domains or areas of instruction with a percentage breakdown as shown in figure 1.

The priority is clearly weighted on the tactical mission the French call airmobile combat. This means the whole spectrum of helicopter operations, and is not limited to what we call air assault or airmobile troop movement. Instead, the relatively small Army Aviation force is centered around the antitank combat mission. This will become more clear with a look at the 14 week-by-week subject list in figure 2.

As the weeks unrolled, I picked up a tremendous amount of technical and slang vocabulary, but I could not shake the feeling that I was lost, that I was missing something. In the first exercise, I rode in the back seat with the instructor and another student up front. I had participated in the preparation for the mission, a simple reconnaissance, so it was easy to follow. The next two exercises in week 3 were similar and only slightly more demanding. What was throwing me were radio procedures. One can speak and understand normal conversation, but imagine a novice listening on one of our radio transmissions, and you can get an idea of the challenge. My time as a privileged observer was running out.

The second tactical week, week 5, was a lot more interesting. There were four separate exercises—each on different terrain and each with different reconnaissance missions. The Puma captains were off on support missions, moving refueling and rearming points, and inserting simulated reconaissance patrols. Some of the Gazelles were tasked to recon routes and firing positions for the HOT missile-equipped Gazelles. The cannon Gazelles performed escort and protection for the other elements. We planned the mission, briefed the other crews and took off to execute. It was all making sense to me, and now I was piloting for one of the other students who was the company commander.

Other aircraft and aircrews are brought to the school to support these exercises. Augmented by those and others from the school, the captains have essentially a full company for each exercise. Again, the missions were primarily reconnaissance-oriented. Trucks were used to represent enemy tanks, and when they were detected the mission was to maintain visual contact and report their progress.

I was really getting into the program. I was impressed with the competence of my classmates. They had obviously been well-trained in the Lieutenant's Course and had perfected their skills in their units. I could discern the strong from the less strong, but there were definitely no sluggards in the bunch. Since I was flying, I was able to get to know each of the captains a little better. They were always in charge of the aircraft and the mission, so my task was simple. My attitude about French Army Aviation was improving daily. I was especially impressed with the detailed knowledge that the students had about the threat. Coming out of teaching tactics at the U.S. Military Academy, I was

FIGURE 1: The programs of instruction for the Captain's Course.

AREA OF INSTRUCTION	PERCENT OF COURSE
1 The captain as commander	11
2 The captain as instructor and trainer	10
3 The captain in his tactical mission	51
4 The captain and physical training	12
5 Administration and logistics, time management	11
6 Written and oral expression	5

pretty current on Warsaw Pact tactics and equipment. These folks were good.

Our program continued with the alternate weeks "in" the classroom. There are no tests so I wondered what motivated the captains to pay such close attention and take so many detailed notes. They are evaluated by the course group instructors and ranked during CPOS, but the real motivation is a genuine thirst for knowledge. I can't hope to penetrate this subject in detail here, but I do believe it exists. It is a dimension of professionalism that may not be universal among the officers, but that was clearly evident in my class.

We made several trips to the Artillery School at Draguignan for combined arms classes. One of these visits was to a classroom-sized amphitheater with a hugh terrain board. The artillery instructors there conducted exercises on the board to show the way the regiments of the other combat arms were arrayed for a given enemy situation. I was not terribly impressed with this instruction, probably because I was adrift in the machinegun rates of the conversations. The French seem to have an amazing

FIGURE 2: Fourteen-week Captain's Course subjects.

WEEK	PRINCIPLE SUBJECT
1	Refresher training on a variety of subjects.
2	Introduction to tactics.
3	Scout and protection patrol exercise.
4	Command.
5	Reconnaissance and intelligence exercise.
6	Training.
7	Antitank patrol exercise.
8	General information, visit to Aerospatiale plant.
9	Antitank exercise.
10	Nuclear, biological and chemical exercise.
11	Oral expression.
12	Tactical exercise in combat helicopter regiment.
13	Visit to other branch schools.
14	General information and orientation presentations.

▨ weeks away from the classroom on field exercises.

ability to all speak at the same time and still make sense of each other. I certainly didn't.

During week 5 I received my baptism of fire. This was the first antitank exercise. There are two basic missions: one to demonstrate how an antitank company is employed and one that the students plan and execute themselves. Their method of employment is significantly different from what I knew as an attack helicopter battalion S3.

The companies are "pure" in that there is no mix of scouts and guns. The regiment employs all of its assets independently with each company sharing information provided by the scouts. The protection company is positioned to engage enemy aircraft or to suppress air defense fires. The HOT missile company is given target information and possible firing positions, but each patrol must select its own firing positions and locate targets individually. It is the company commander that coordinates the two-aircraft patrols to deconflict their fires and ensure target coverage. At the aircrew level, the tactics are essentially the same as ours. They employ terrain flight and maximum stand-off ranges. Escape routes from each firing position are selected carefully. The whole company (10 aircraft at full availability) is engaged simultaneously. When out of missiles or needing fuel, the patrols are released to the forward arming and refueling point.

On one of these exercises, without warning or adequate preparation, I was tasked as company commander. I balked. There was less than 30 minutes before takeoff! For me to direct three patrols on a mission normally would be no problem, but I was still struggling to understand the radio traffic let alone being able to send comprehensible orders. The course director, a lieutenant colonel, was not sympathetic. He offered to give me a captain to ride in the back to send my orders. I didn't want to disrupt their

A Gazelle 341 approaches the Advanced Army Aviation School, over Le Cannet des Maures village, near Le Luc.

training and lose face in the bargain. They backed down and made me a patrol leader, another role I had never played. I wondered why they had let me coast as a silent observer up to that point? It got my attention. The patrol went off perfectly, thanks to the maintenance officer I dragged along to do my radio transmissions. Never was it more clearly brought home to me how hard it will be to work with an ally when you haven't worked together before. Here I was, a Senior Army Aviator who spoke passable French, 7 weeks into the course and unable to lead a company! It was just the humbling experience that the laughing course director had in mind when I returned from the mission!

The last tactical exercise before the trip to a regiment is in week 9. It is again an antitank exercise, but it pulls all of the elements of the regiment together. Four subexercises are spread over the week. The whole school and a regiment from outside the school support this synthesis of all previous instruction. The course stays in the field all day, and returns to the base at night. There are also several night missions. I missed this week because of a trip to the United States with the school commandant on his visit to Ft. Rucker.

My class spent week 12 with a regiment in Friedrichschaffen, Germany. We were hosted there by the 2d Combat Helicopter Regiment, commanded at that time by Colonel Paul Bonnet, a former liaison officer to Ft. Rucker. As I had returned late from the trip to the United States, I flew up with the deputy commandant on Monday to join the captains who had been there since Saturday.

My first and lasting impression of that trip was that the class had developed a camaraderie and a character of its own. Both on and off duty, the students kept up a running battle of wits and frivolity that didn't at all diminish their professional comportment. Several of them, including the indomitable Captain Riedel, topped 1,000 hours while there and were baptized with a toss in the unheated waters of a local pool. At supper one night in the regimental mess, one of the course instructors "coined" me with his Army Aviation coin, apparently received from LTC Rains. I'd foolishly left mine in my room, so I got to buy wine for the whole course. Now I was one of them.

Colonel Bonnet took me on a tour of his regiment on a bad weather day. There were signs everywhere of his time at Ft. Rucker. He had instituted a no alcohol during duty hours policy, for example, which is not usual in other regiments. He also coined me since he carries about five different coins with him even during physical training. I was ready that time.

Exercises that week were an extension of the synthesis week with the added dimension of using actual aircrews from the regiment to form the patrols that the captains led. Though it was late May, it snowed one day adding to the realism of operating on unfamiliar terrain in harsh conditions. The training they had received really showed. I felt they could not have been better prepared to command a company.

During the final week I got to change hats and teach my first class on the U.S. Army and Army Aviation. This was the "information" week in which they receive orientations by a number of external organizations, including one by the commander of French Army Aviation. My presentation can have the effect of deflating the French. They cannot look at a tape on the AH-64 Apache or see a picture of Hanchey Army heliport, Ft. Rucker, with almost as many aircraft as in their whole Army without feeling a little humble. My investment in the class as a fellow student made me all the more aware of that, and helped me to emphasize our status as allies and the crucial need that we have to work together.

Recapitulation

I have not reiterated the details of the classroom instruction or made any comparisons with our officer advanced course. The two courses are aimed at different targets. French captains in aviation do serve in staff assignments at regiment (battalion)-levels, but the Captain's Course is primarily a precommand course. It provides detailed information on the technical, tactical and administrative duties of the company commander.

There are only four officers in the course group. The director, two field grade instructors and one senior captain. The students themselves present much of the classroom instruction. All of the instruction, particularly the tactical training, is highly specialized and personal. The students train on the missions of the combat helicopter regiment, but they focus on the type of company that they will command.

No course is perfect, and I could fault this one on being too narrowly oriented on aviation and not enough on combined arms tactics. Yet, the French would only mildly agree. Their present tactics largely keep aviation elements separated from ground maneuver units. They are complementary, but they are not integrated, especially at the company level. That integration is taught to majors in the Ecole de Guerre, the French Command and Gen-

A Typical Captain

Captain Jean-Pierre Duran

Captain Jean-Pierre Duran, 31 years old, is a product of the "old" system. He enlisted in 1978 and was accepted in the Ecole Militaire Interarmes, the Officer Candidate School, in 1980. After graduation he spent 2 years as a platoon leader in a Naval Infantry Parachute Regiment. ("Naval" in this case refers to the traditional designation of specialized Army troops—like the Marines, but part of the Army.) Captain Duran picked up a number of qualifications both before and after going to flight school in 1984. He is a commando techniques instructor, a military mountain climbing specialist and an English language instructor.

In aviation, he has 1,000 flight hours in Alouette IIs and IIIs, and both series of the Gazelle. Additionally, he has attended the Air-Ground Operations School in Germany and is one of the rare forward air controller-qualified officers in the French Army. He has served in an Alpine Helicopter Company, and is now assigned to the 3d Combat Helicopter Regiment of the 4th Airmobile Division. He is night vision goggles rated because of that assignment.

Captain Duran finished the Captain's Course in December 1988. He will command a company for 2 years starting in 1989. He hopes to complete further English language studies after that with an eye toward serving as either an exchange or liaison officer in the United States or U.S. Army, Europe. He would also like to become an instructor pilot. He is married and has two children.

Precommand Training

eral Staff College, and it is managed by the regiments.

When a captain leaves CPOS, he or she is deemed ready to command. In my opinion, they are better prepared specifically because of the application exercises in the course. Each student flies an average of 50 hours during CPOS, including 5 at night and 1 with night vision goggles. Each of them has multiple opportunities to plan and execute the exact mission that they will be conducting in their commands. They have confronted the difficulties with actual aircraft, real logistics problems, live aircrews from unfamiliar units and operations on unfamiliar terrain. It is true that the courses are small. Fourteen to sixteen captains in each class and two classes per year is certainly more manageable than the hundreds of students in our advanced course. That does not preclude reflecting on the philosophy of the French approach for its possible merits in U.S. Army Aviation training.

The two elements of that philosophy are *specialization* and *self-study*. There is a certain appeal to tailoring training in the schoolhouse to the individual's next assignment. With the increasing sophistication of all types of military equipment, we may not be able to afford the luxury of training all captains to be able to serve in any aviation assignment or on any staff. This does not imply that we should shuck combined arms training in favor of strict specialization. On the contrary, it demands a rigorous evaluation of how much the Army Aviation Officer Advanced Course has to look, feel and smell just like any other combat arms officer advanced course.

Is it time to change our traditional multiflavored junior officer's training into a more specialized hands-on program with flight exercises built into the courses? Simulation offers a partial answer to an already overburdened flight line. Both the multitrack and small group instruction programs are leading in that direction. Self-study is already an important element of the military qualification standards program. Obviously, the more common core instruction that can be done individually, the more time will be available for

An Atypical Captain

Captain Nicole Riedel

Captain Nicole Riedel is a real pioneer in the French Army. She has credit for many "firsts" in her short military career. She entered the Army at 18 years of age, but completed 4 years of study for the equivalence of a master's degree in applied foreign languages. At 22 years of age, she passed a difficult entrance examination that earned her commission as a lieutenant in the Engineer Corps. She was accepted for flight training and completed the courses at Dax and Le Luc. While in flight school, she married a French Navy pilot.

She was first assigned for 2 years of national service in an engineer regiment followed by the Lieutenant's Course at Le Luc in 1983. Following 4 years in an aviation unit as a patrol leader, Captain Riedel joined the Captain's Precommand Course at Le Luc.

Captain Reidel was the first woman pilot in French Army Aviation, the first commissioned aviator and the only (in 1987) female captain in French Army Aviation. She would become the first graduate of the Captain's Course, and, soon after, the first commander of a combat aviation escradrille (company/troop). She is completing her second year of successful command of a 10-helicopter reconnaissance troop with 50 men under her orders.

She has not achieved these accomplishments without challenge. Not only has she overcome the difficulties, but she has also set high standards for the other women that will inevitably follow the trail she has blazed.

specialized training. It is worth considering.

Conclusion

Sergeant pilots, lieutenant pilots in command right out of flight school, a flying officer advanced course? Not the stuff of noncontroversy, and certainly less easily digested than French bread. Yet, there is more than just another approach to manning and training a credible Army Aviation force in these three articles. The differences between the French and U.S. Army are great. That alone should be a cause for concern. Coordinated and effective joint multinational operations do not happen easily. Our experience in Grenada revealed serious shortcomings between our own services, yet our Navy and Army speak almost the same languages.

Set aside the questions about French political commitment to the North Atlantic Treaty Organization Alliance and suppose that the French II Corps, already stationed in Germany, were committed to a sector of the Central Army Group, Central Europe southern flank. Now imagine a combined U.S. and French attack helicopter engagement of a major Warsaw Pact second echelon combined arms army on the march through Czechoslovakia. In World War II in the south of France, the Allied command solved the problem of coordination by putting the Rhone River between the French and the other allies. That expedient may not work, and we risk wasting limited assets on both sides if we don't work out the details ahead of time.

These details are the business of aircrews and small unit commanders. Standardization agreements and corps-level exercises are critical components of the cooperation equation; however, they fall short of sorting out who shoots which tank or how to control a multihelicopter air-to-air battle. A knowledge of where an ally's pilots come from, how they are trained and how they operate is a reasonable substitute for having the chance to fly and operate together in an exercise. Obviously, if you have read all three articles and have gotten to this point you have already embraced some of that spirit. Now for the Italians?

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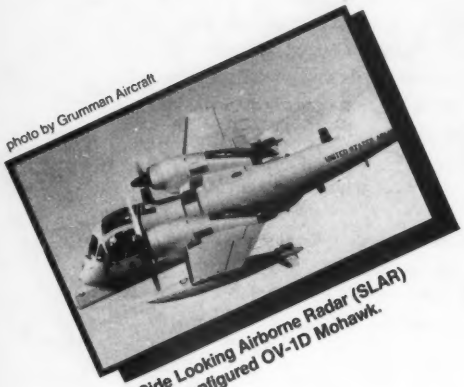
photo by Grumman Aircraft

Side Looking Airborne Radar (SLAR) configured OV-1D Mohawk.

photo by Beechcraft Aerospace

Beechcraft RC-12K Guardrail SIGINT aircraft.

photo by McDonnell Douglas

CF-18 Hornet fighters of 1st Canadian Air Group.

SEMA CHECK SIX

Royal Search—A SEMA Exercise

"Air combat training must be as realistic as possible. Anything else is just rubbish."
Eric Hartman (world's top ace with 352 victories)

A COOL, 15-KNOT wind blew across the flightline from the North Sea, which lay just off the departure end of runway 09. Under blue skies flecked with thin wisps of high stratus, a pair of dull grey Royal Air Force (RAF) Phantoms lined up on the active 400 meters away. They went to full burner in a crash of sound that drowned out the gentle whine of four Lycoming turboprops turning at ground idle. Side Looking Airborne Radar (SLAR) 2 and QUICK LOOK 2 equipped aircraft crews were aligning inertial navigation systems for 1000Z launches. Once these aircraft were "wheels in the well," the flightline would be deserted but for lonely ground power carts, fire extinguishers and abandoned chocks. The latter were mute evidence of four OV-1D Mohawk, two RC-12D Huron Guardrail and two CF-18 Hornet aircraft out playing aerial hide-and-seek over

the horizon to the south.

Suddenly, an officer in a flight suit dashed out of the operations building. Catching the attention of each Mohawk crew, in turn, he held up a clipboard with a simple message:

AWACS
MAGIC
364.2

(This message tells the pilots they can contact AWACS (airborne warning and control system) on MAGIC 364.2 frequency.) A minute later both Mohawks unfeathered their propellers and turned to taxi for takeoff. Pilots exchanged salutes with their crewchiefs. Day 3 of the first ever aerial exploitation battalion (AEB) air warfare exercise was well underway. Time for the U.S. Army and Canadian ground crews to take a break in the grass, warming to the soft, Scottish, spring sunshine, while waiting for SLAR 1 and QUICK LOOK 1 aircraft recovery and turn around at 1100Z.

Royal Search, a 2d Military Intelligence (MI) Battalion (Bn) Aerial Exploitation (AE) air warfare exercise conducted over Scotland 19 to 25 May 1987, was a long time coming. But, once put in motion, the entire effort was planned and organized in less than 5 months.

As originally conceived in late 1979, the then 73d MI Command (Aerial Surveillance) would deploy a number of Mohawks from Stuttgart, Germany, to RAF Leuchars, Scotland, to train over the RAF Strike Command Spadeadam electronic warfare (EW) range. Spadeadam encompasses several thousand square miles of sparsely populated terrain south of Edinburgh-Glasgow; it has a variety of contemporary surface-to-air missiles/air defense artillery (SAM/ADA) emitters as well as simulated airfields and other military targets. Unfortunately, flying hour and budgetary restrictions never took the 73d's plan beyond a brief site survey in the United Kingdom.

By the time the concept resurfaced in 1986, the 73d had become A Company, 2d MI Bn (AE) and alongside B Company's Guardrail aircraft, provided commander VII Corps, through the 207th MI Brigade (Bde), with aerial photography, SLAR, electronic intelligence (QUICK LOOK) and communications intelligence (Guardrail). While the unit's special electronic mission aircraft (SEMA) capabilities had evolved over the intervening years, so had the threat. Despite standoff flight profiles, the ever-increasing hazards of aerial interceptors (AI) with beyond visual range and short-range missiles as well as forward-deployed SAMs seriously threatened the AE's vital wartime mission.

Facing this challenge in the summer of 1986, 2d MI Bn (AE) initiated a thorough air warfare training program. Exchange visits were made with other Central Region flying units, including SR-71, TR-1, North American Treaty Organization (NATO) E-3A AWACS, RAF Jaguar recce and 439 Tactical Flight Squadron (Canadian) flying the CF-18. The "Tigers" of 439, out of BadenSoellingen, just across the Black Forest from Stuttgart, became partners and good friends in battalion efforts to get into the fast lane of air warfare.

Royal Search was to be the training program graduation ceremony. Four Mohawks and two Guardrail aircraft were to operate from RAF Leuchars for a week's flying in support of an engaged notional VII Corps. Spadeadam would provide threat SAM/ADA signals to light up APR-39 radar warning receivers, while two colocated Hornets acted as MiG-29s under control of local Boulmer Ground Control Intercept (GCI) radar. NATO AWACS would provide AI warning and control United Kingdom-based friendly counter-AI fighters.

In August 1986, A Company ran a rudimentary exercise over the Low Fly 7 area of southern Germany. Grafenwoehr-based tactical radar threat generator provided SAM/ADA simulations, while the Tigers of 439 flew basic intercepts with assistance from Strawbasket GCI. Shortly thereafter, the battalion was cleared to train in the newly opened Polygon EW range, a 7,000-square mile area straddling the French/German border. Polygon, then not yet fully operational, provided emitters of quality and density significantly less than Spadeadam.

Go ahead for Royal Search was given in January 1987 with execution set for late May. Five months of hectic planning commenced to tie in the various multiservice, multinational players. Hours on the telephone and stacks of messages finally produced the Canadian MiG-29s, NATO AWACS, Boulmer radar and C-130 Hercules missions; use of Leuchars and Spadeadam; RAF F-4 Phantom Combat Air Patrol (CAP); and critical exercise airspace clearances.

Two Mohawks made a site survey in early April, staging for 3 days out of RAF Mildenhall near London. Direct coordination was made there with Headquarters, 3d Air Force, where F-111 driver Major Gary Perkins did sterling service, unravelling the mysteries of United Kingdom airspace management. Visits were made to Spadeadam and Leuchars where hosts graciously opened their doors and enthusiastically supported the exercises' unique requirements.

On 13 May, Captain (CPT) Marty Tate, 439 operations

photo by McDonnell Douglas

CF-18 Hornet fighter of 1st Canadian Air Group turns away to reveal its false canopy.

officer, dropped into Stuttgart in the squadron T-33 T-Bird for an exercise prebrief and orientation flight in the Mohawk. That afternoon battalion aircrews assembled in the dining facility for presentation of the exercise's operations order and discussion of rules of engagement.

Task Force (TF) 2-207 departed Stuttgart Army Airfield during the morning of 19 May. Mohawks transited to RAF Leuchars with a fuel stop at Royal Netherlands Naval Air Station Valkenburg, flying the overwater leg low-level. The Guardrails transited nonstop. Thirty-six soldiers, their baggage, tools, spares and a Hobart ground power unit went aboard a C-130, which paused briefly at Baden-Soellingen to pick up six of the 439 ground crew and their "Tom Thumb" deployment container. Two Hornets arrived at Leuchars by way of participation in another United Kingdom-based NATO air exercise.

Exercise Day 1 began 20 May in the briefing room where all aircrews received weather, United Kingdom low-fly and Spadeadam procedures, exercise scenario and the day's flying program. Soldiers from Detachment B, 581st MI Co, from RAF Alconbury, provided control cell, scenario scripting and briefing support.

The SLAR 1 aircraft was airborne shortly after 0900Z, followed in succession by two Guardrails and one QUICK LOOK mission aircraft. CPT Tate and his wingman then went vertical with two pairs of Phantoms in hot pursuit. NATO AWACS took station over the North Sea at 0930Z.

Another SLAR aircraft and a Spadeadam penetration photo mission aircraft launched in the afternoon. The Hornets turned around for what became their standard four-sortie day. During the heat of the action, the 207th MI Bde commander and 11th Aviation Group commander arrived by C-12 utility aircraft from Stuttgart. They remained with the troops until noon the next day.

On Day 2, the exercise rhythm took hold. Daily brief was shorter and more to the point. The QUICK LOOK 1 aircraft was off by 0800Z. From a morning high, though, events rapidly went downhill. No AWACS was available this day. Spadeadam developed chronic technical problems that limited their emitter capability. Finally, at mid-afternoon the field was closed by severe crosswinds and all aircraft were recovered.

Day 3 dawned "clear blue and 22" with light winds out of the east. AWACS and Spadeadam were up, and everyone was eager to get airborne. The Guardrails were first off, followed by SLAR 1, QUICK LOOK 1, Hornets and Phantoms. The latter were followed, in turn, by SLAR 2, QUICK LOOK 2, SLAR 3, a low-level photo and another batch of Hornets and Phantoms. The last act of the day was a final debrief and a quick farewell to the two Hornets and two Guardrails that headed back to Germany.

All others spent the weekend in Edinburgh, sightseeing, shopping and enjoying a Scottish evening of local cuisine and music. On Monday, it was back aboard Mohawks and the C-130 for the return trip.

No doubt Royal Search accomplished a great deal. For the first time SEMA aviation was played in a realistic Central Region air warfare scenario. SEMA vulnerability, particularly to AI threats, was brought home. More important was the often surprising knowledge, expressed by the 439 pilots, of just how difficult fixed-wing SEMA targets are to acquire and successfully attack. Coupled with this knowledge was the certain truth that AEB success or failure hinges on a thorough comprehensive air warfare training program and the development of an aircrew air warfare consciousness as passionate as that of our colleagues in fast jets. The AEB mission is no less important, demanding or forgiving.

The Royal Search exercise was not error free by any means. It was not an end in itself, but rather an intermediate objective in preparing for AEB wartime responsibilities. Finally, to quote CPT Tate when first asked to provide 2d MI Bn (AE) with aggressor training, "Too easy, eh!"

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The Birth of Army Aviation—

A Medical Perspective

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Lieutenant Benjamin D. Foulois

SINCE 1954 Ft. Rucker, AL, has had the proud tradition of being the home of modern Army Aviation, but the medical Army aviator is part of a tradition that dates back to the beginning of the Army flight program. For it was in 1910 that an Army aviator flew the first Army-owned airplane from a military installation. Lieutenant Benjamin Delahauf Foulois flew U.S. Army Aeroplane No. 1, a "Wright Flyer," from what is now the parade field at the home of medical aviation at Ft. Sam Houston, TX.

It all started in December 1907 when President Teddy Roosevelt insisted that the U.S. Signal Corps appropriate $25,000 for the first heavier-than-air flying machine. The aircraft specifications stipulated that it must fly at a speed of 40 miles per hour, carry two people and be able to turn in all directions while in flight. An additional specification was added when on the ground—that it must be capable of being dismantled and loaded on a wagon. An important clause of the $25,000 grant was the stipulation that two Army officers be taught to fly the machine.

On 9 September 1908, Orville Wright began demonstrations of his aircraft for the Signal Corps and promptly established three flight endurance records with the longest flight lasting in excess of 1 hour.[1] Based on evaluations conducted from September 1908 through July 1909, the Army decided to purchase a Wright aircraft and contracted with the Wright brothers to establish a temporary flying school at College Park, MD.

The first two Army trainees selected for flight school were Lieutenants Frank Lahm and Frederic Humphries; however, after Lieutenants Lahm and Humphreys badly damaged the airplane, they were ordered back to their regular billets. This left LT Foulois, who had joined the College Park program in October 1909, to teach himself how to fly. After the Wright brothers repaired the aircraft, LT Foulois and the Wright aircraft were all that were left as the total Army's entire heavier-than-air flying force.

In December 1909, the War Department ordered LT Foulois to take his rebuilt plane to Ft. Sam Houston. LT Foulois explained: "I would like to think that I was chosen on the basis of intellectual and technical ability, but I found out later that it was my short stature, light weight and mapreading experience that had tipped the decision in my favor."[2] LT Foulois and a crew of nine enlisted men arrived with the crated aircraft at Ft. Sam Houston in early February 1910. After a few weeks of reassembling the plane and erecting a catapult that would assist the plane during takeoffs, Lt. Foulois made his initial solo flight on 2 March 1909. It was a day of personal firsts as LT Foulois made his first solo takeoff, first solo landing and first crash. During this time, LT Foulois had the honor of commanding the only plane west of the Mississippi River.

LT Foulois' frequent flights before reveille bugle call managed to disturb the sleep of many of his comrades at Ft. Sam Houston. Several of them decided to take him out one Saturday night in the hopes that he would not bother them on Sunday morning. The festivities began in the barroom of the Menger Hotel where the object was to reduce the establishment's liquor supply. As dawn came and the soldiers returned to their tents to sleep off the effects of the previous night, LT Foulois rolled out his combat force and buzzed over the tent tops.[3]

Today, medical Army aviators do physical training on the same parade field that LT Foulois used as a runway. The commanding general of Health Services Command lives in a house where the old hangar used to be located. A monument to LT Foulois proudly stands where the old flight operations building once stood. Helicopters from the 507th Medical Company (Air Ambulance) still use the parade field as a heliport when they land in support of Brooke Army Medical Center.

The events of 1910 are still remembered and depicted at Ft. Sam Houston. The monument to LT Foulois on the parade field and a section in the Ft. Sam Houston post museum stand as proud tribute to the first home of Army Aviation.

[1] Misenhimer, Ted G. *Aeroscience.* Aero Products Research, Inc., Los Angeles, CA 1973.
[2] Shiner, John F. *Foulois and the U.S. Army Air Corps 1931-1935.* Office of Air Force History, Washington, DC 1983.
[3] Copp, DeWitt, S. *A Few Great Captains.* Doubleday & Company, Inc., Garden City, NY 1980.

USAASO SEZ

PART 1: Violations of Federal Aviation Regulations

Mr. Jesse M. Burch Jr.
U.S. Army Aeronautical Services Office
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THE FOLLOWING information is extracted from the Federal Aviation Act of 1958, Public Law 85-726, as amended by the Department of Transportation Act of 1966, Public Law 89-670.

COMPLAINTS TO AND INVESTIGATIONS BY THE ADMINISTRATOR AND THE BOARD FILING OF COMPLAINTS AUTHORIZED

Sec. 1002(a) Any person may file with the Administrator or the Board, as to matters within their respective jurisdictions, a complaint in writing with respect to anything done or omitted to be done by any person in contravention of any provisions of this Act, or of any requirement established pursuant thereto. If the person complained against shall not satisfy the complaint and there shall appear to be any reasonable ground for investigating the complaint, it shall be the duty of the Administrator or the Board to investigate the matters complained of. Whenever the Administrator or the Board is of the opinion that any complaint does not state facts which warrant an investigation or action, such complaint may be dismissed without hearing. In the case of complaints against a member of the Armed Forces of the United States acting in the performance of his official duties, the Administrator or the Board, as the case may be, shall refer the complaint to the Secretary of the department concerned for action. The Secretary shall, within ninety days after receiving such a complaint, inform the Administrator or the Board of his disposition of the complaint, including a report as to any corrective or disciplinary actions taken.

Accomplishment of the responsibility assigned to the Secretary of the Army by the above underlined portion has been assigned to the director, USAASO. See Army Regulation (AR) 95-3, *General Provisions Training, Standardization, and Resource Management*, paragraph 2-7, dated 15 September 1988. The director accomplishes this task through four basic steps:

- Receives notification of an alleged violation from a Federal Aviation Administration (FAA) Regional Counsel. The following is the contents of a typical letter:

Pursuant to Section 1002(a) of the Federal Aviation Act of 1958, as amended, we are referring to you a complaint and our investigation file relating to the alleged violation of the Federal Aviation Regulations by a U.S. Army Beech 200 aircraft identified as ____ on an IFR flight plan from Fort ____ to Fort ____ .

Available evidence indicates that on or about January 15, 1988, ____ was assigned an altitude of 14,000 feet. Thereafter ____ operated at an altitude of 14,600 feet without receiving an amended clearance from air traffic control. This deviation from an assigned clearance was in violation of Sections 91.75(a) and 91.9 of the Federal Aviation Regulations.

This complaint and our investigation file are referred to you for further investigation and such corrective or disciplinary action as you may deem appropriate. We would appreciate being informed within 90 days, as required by Section 1002(a), of any action taken in this matter.

- Forwards the FAA Regional Counsel letter, with all enclosures, to the appropriate major Army command (MACOM) for investigation.
- Receives the result of the investigation from the MACOM.
- Summarizes the results of the investigation in a letter, typical of the one below, to the Regional Counsel:

Please refer to your Case Number ____ .

As a result of the Army's investigation into this alleged violation, the crewmembers of ____ have been reprimanded. In addition, they have been required to share this experience with other unit aviators, stressing the seriousness of such deviations.

No further action is planned.

Do not be misled that the results of these investigations are always the same. Some determine that no violation occurred and others result in permanent grounding of an aviator.

A second USAASO SEZ article on this subject will be published in the near future. It will summarize changes to AR 95-3, paragraph 2-7, and review violations committed by Army personnel. For additional information please contact Mr. Jesse M. Burch Jr., AUTOVON 284-7796/6304, or Commercial 202-274-6304.

USAASO invites your questions and comments and may be contacted at AUTOVON 284-7773.